2023 Orange County Congestion Management Program Report

Orange County Transportation Authority

November 2023

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Chapter 1: Introduction

Purpose and Need

In June 1990, the passage of the Proposition 111 gas tax increase required California's urbanized areas – areas with populations of 50,000 or more – to adopt a Congestion Management Plan – (CMP). The following year, Orange County's local governments designated the Orange County Transportation Authority (OCTA) as the Congestion Management Agency (CMA) for the County. As a result, OCTA is responsible for the development, monitoring, and biennial updating of Orange County's CMP.

The passage of AB 2419 (Chapter 293, Statutes of 1996), in July 1996, provided local agencies the option to elect out of the CMP process without the risk of losing state transportation funding. However, local jurisdictions in Orange County expressed a desire to continue the existing CMP process, because the requirements were similar to those of the Orange County Measure M Growth Management Program (GMP), and because it contributes to fulfilling federal requirements for the Congestion Management Process (23 Code of Federal Regulations 450.320), which is prepared by the Southern California Association of Governments (SCAG). The OCTA Board of Directors affirmed the decision to continue with the existing CMP process on January 13, 1997. Although the GMP ended with the sunset of Measure M, the CMP remains necessary as an eligibility requirement under Measure M2 (M2).

As mentioned above, the CMP contributes to federal Congestion Management Process requirements, which is a systematic and regionally accepted approach for managing congestion. The federal Congestion Management Process provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs.

The federal Congestion Management Process is also intended to serve as a systematic process that provides for consistent and effective integrated monitoring and management of the multimodal transportation system.

The process includes:

- Development of congestion management objectives;
- Establishment of measures of multimodal transportation system performance;
- Collection of data and system performance monitoring to define the extent and duration of congestion and determine the causes of congestion;
- Identification of congestion management strategies;
- Implementation activities, including identification of an implementation schedule and possible funding sources for each strategy; and
- Evaluation of the effectiveness of implemented strategies.

A federal Congestion Management Process is required in metropolitan areas with population exceeding 200,000, known as Transportation Management Areas (TMAs). Federal requirements also state that in all TMAs, the CMP shall be developed and implemented as an integrated part of the metropolitan transportation planning process.

CMP Goals

The goals of Orange County's CMP are to support regional mobility objectives by reducing traffic congestion, to provide a mechanism for coordinating land-use and development decisions that support the regional economy, and to support gas tax funding eligibility.

To meet these goals, the CMP contains a number of policies designed to monitor and address system performance issues. OCTA developed the policies that makeup Orange County's CMP in coordination with local jurisdictions, the California Department of Transportation (Caltrans), and the South Coast Air Quality Management District (SCAQMD).

State Legislation

Required Elements

California Government Code Section 65089(b) requires the CMP to include specific elements, as summarized below. The full text of the Government Code can be viewed at https://leginfo.legislature.ca.gov/faces/codes.xhtml, sections 65088-65089.10.

Traffic Level of Service Standards – §65089(b)(1)(A) & (B)

Traffic level of service (LOS) standards shall be established for a system of highways and roadways. The highways and roadway system shall be designated by OCTA and shall include, at minimum, all state highways and principal arterials. None of the designated facilities may be removed, and new state highways and principal arterials must be added, except if they are within an infill opportunity zone. The LOS must be measured using a method that is consistent with the Highway Capacity Manual. The LOS standards must not be below level of service "E", unless the levels of service from the baseline CMP

dataset were lower. If a Congestion Management Program Highway System (CMPHS) segment or intersection does not meet the minimum LOS standard outside an infill opportunity zone, a deficiency plan must be adopted (subject to exclusions).

Chapter 2 specifically addresses this element.

Performance Measures – §65089(b)(2)

Performance measures shall be established to evaluate the current and future performance of the transportation system. At a minimum, measures must be established for the highway and roadway system, frequency and routing of public transit, and for the coordination of transit service by separate operators. These measures will be used to support improvements to mobility, air quality, land use, and economic objectives and shall be incorporated into the Capital Improvement Program, the Land-Use Analysis Program, and any required deficiency plans.

Chapter 3 specifically addresses this element.

Travel Demand – §65089(b)(3)

A travel demand element shall be established to promote alternative transportation methods, improve the balance between jobs and housing, and other trip reduction strategies. These methods and strategies may include, but are not limited to, carpools, vanpools, transit, bicycles, park-and-ride lots, flexible work hours, telecommuting, parking management programs, and parking cash-out programs.

Chapter 4 specifically addresses this element.

Land-Use Analysis Program – §65089(b)(4)

A program shall be established to analyze the impacts of land-use decisions on the transportation system, using the previously described performance measures. The analysis must also include cost estimates associated with mitigating those impacts. To avoid duplication, this program may require implementation through the requirements and analysis of the California Environment Quality Act (CEQA).

Chapter 5 specifically addresses this element.

Capital Improvement Program – §65089(b)(5)

The CMP shall use the performance measures described above to determine effective projects that mitigate impacts identified in the Land-Use Analysis Program, through an adopted seven-year capital improvement program. This seven-year program will conform to transportation-related air quality mitigation measures and will include any projects that increase the capacity of the transportation system. Furthermore, consideration will be given to maintaining or improving bicycle access and safety within the project areas. Projects necessary for preserving investments in existing facilities may also be included.

Chapter 6 specifically addresses this element.

CMA Requirements

As Orange County's CMA, OCTA is responsible for the administration of the CMP, as well as providing data and models that are consistent with those used by SCAG. OCTA is also responsible for developing the deficiency plan processes. These requirements are described in the legislation and are summarized below.

Modeling and Data Consistency – §65089(c)

In consultation with SCAG and local jurisdictions, OCTA developed a uniform database on traffic impacts for use in a countywide transportation computer model. This database is consistent with the database maintained by SCAG, the regional agency. The Orange County Transportation Analysis Model (OCTAM) is developed and maintained by OCTA. OCTAM uses standardized assumptions and conventions and is consistent with the methodologies adopted by SCAG. OCTA encourages local jurisdictions to use OCTAM to determine the quantitative impacts of development on the circulation system. This approach to modeling and data consistency reflects a consensus approach developed through discussions between OCTA and local jurisdictions.

Appendix G discusses this requirement in more detail.

Deficiency Plan Procedures – §65089.4

OCTA is responsible for preparing and adopting procedures for local deficiency plan development and implementation. OCTA's deficiency plan procedures incorporate a methodology for determining if deficiency impacts are caused by more than one local jurisdiction within Orange County. If required, a multi-jurisdictional deficiency plan must be adopted by all participating local jurisdictions. The procedures also provide for a conflict resolution process for addressing conflicts or disputes between local jurisdictions in meeting the multi-jurisdictional deficiency plan responsibilities.

Chapter 3 and Appendix C discuss this requirement in more detail.

Other Relevant Legislation

SB 743

Approved in 2013, SB 743 amended the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Since its passing, the Governor's Office of Planning and Research has proposed changes to the CEQA Guidelines that identify vehicle miles traveled (VMT) as the most appropriate metric to evaluate a project's transportation impacts. Since adoption by the California Natural Resources Agency in 2018, automobile delay, as measured by LOS and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA.

The intent of this legislation is to balance the need for traffic LOS standards with the need to build infill housing and mixed-use commercial developments within walking distance of mass transit facilities, downtowns, and town centers. In doing so, this legislation aims to provide greater flexibility to local governments to balance these sometimes-competing needs.

Lead agencies, including OCTA, are required to comply with SB 743 requirements in the CEQA Guidelines, and OCTA even evaluates VMT in plans such as the Long-Range Transportation Plan (LRTP). However, a jurisdiction may still adopt LOS as a performance standard for analyzing traffic conditions and maintaining throughput on its highway system. Therefore, as Orange County's CMA, OCTA still requires LOS analysis for certain projects as defined in the CMP Transportation Impact Analysis (TIA) Guidelines.

Chapter 2: Traffic Level of Service Standards

In 1991, the OCTA implemented an intersection capacity utilization (ICU) monitoring method, developed with technical staff members from local and state agencies, for measuring the LOS at CMPHS intersections. The CMP LOS grade chart is illustrated in Figure 1.

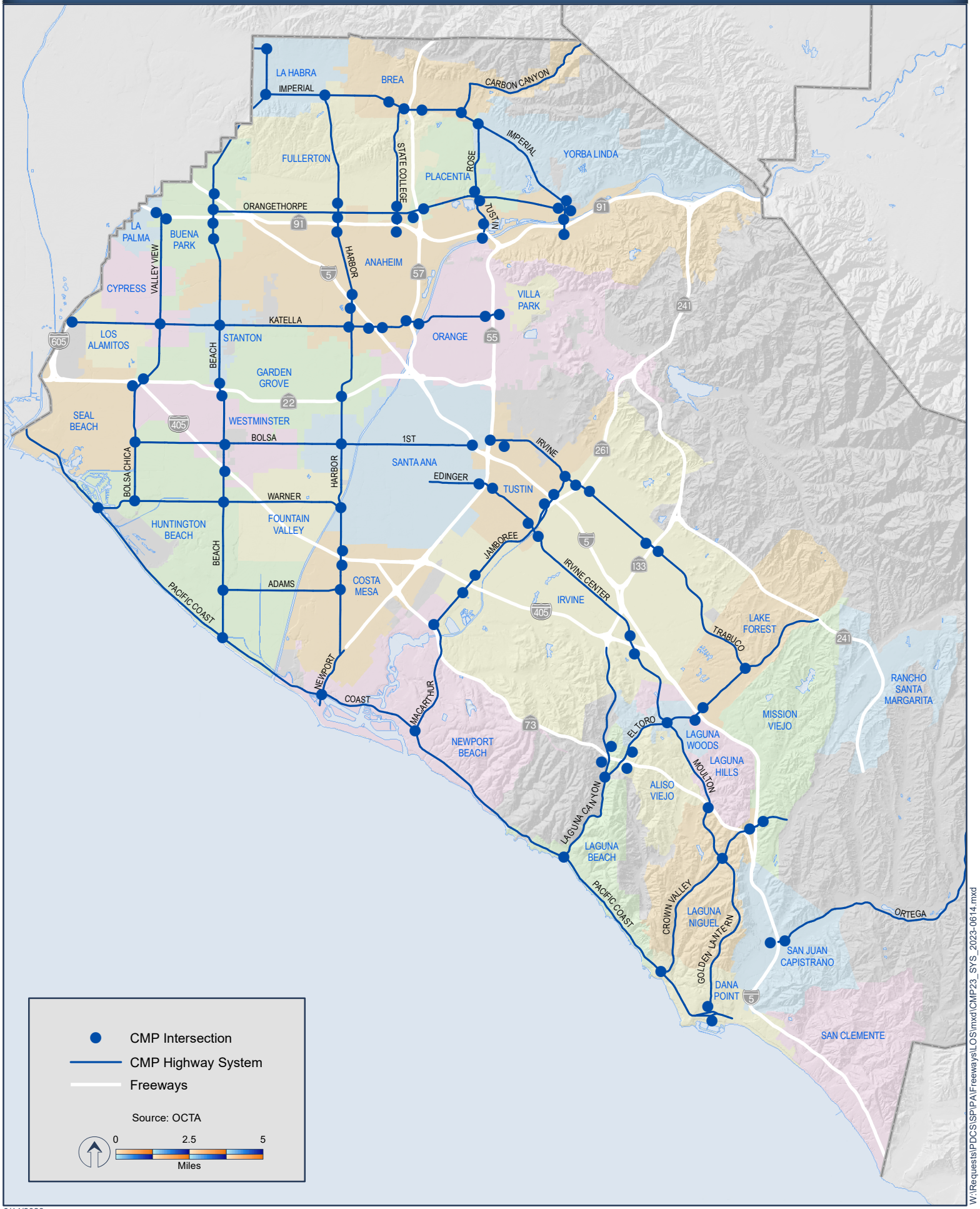
FIGURE 1: LOS Grade Chart

Level of Service	ICU Rating
A	0.00 – 0.60
B	0.60 – 0.70
C	0.70 – 0.80
D	0.80 – 0.90
E	0.90 – 1.00
F	> 1.00

The first CMP LOS measurement recorded, which was in 1992 for most CMP intersections, established the baseline for comparing future measurements. During subsequent LOS monitoring, CMP statute requires that CMPHS intersections maintain a LOS grade of 'E' or better, unless the baseline is lower than 'E'; in which case, the ICU rating cannot increase by more than 0.10. Chapter 3 discusses the ICU method in more detail.

OCTA has an established CMPHS, consisting of Orange County's state highways and the arterials included in OCTA's Smart Street network (Figure 2). If, during any monitoring period, a CMPHS intersection is determined to be performing below the LOS standards, the responsible agency must identify improvements necessary to meet the LOS standards. This is accomplished either through existing plans or capital improvement programs, or through the development of a deficiency plan. This is described in more detail in Chapter 3.

Figure 2: 2023 Congestion Management Program Highway System



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Caltrans District 12 publishes quarterly mobility performance results which are located in Appendix A. Caltrans is responsible for monitoring freeway performance and addressing any deficiencies on state-operated facilities. Caltrans' responsibilities include, but are not limited to:

A. Evaluating current conditions and identifying deficiencies.

B. Developing plans and strategies to address deficiencies.

C. Evaluating development projects of local and regional significance to determine whether they will impact the state transportation system and, if so, working with lead agencies to develop potential mitigation measures.

For the state transportation system, Caltrans does not use CMP thresholds and analysis methodologies to determine if significant impacts occur under CEQA. Their specific focus is on maintaining the safety of state highways. As such, their performance measures tend to focus upon freeway segment/ramps, ramp metering operations, queue lengths, and signal operations (timing, phasing, and system/series progression) metrics.

Local agencies are encouraged to coordinate with the Caltrans Local Development Review Branch early in the development process to determine what methodologies and thresholds of significance should be used to identify impacts to the State transportation system.

Chapter 3: System Performance

Highway and Roadway System Performance Measures

This section discusses the process for determining ICU ratings, as well as how ICU ratings determine the LOS at CMPHS intersections. This method is generally consistent with the Highway Capacity Manual.

Overview of ICU Methodology

Traffic counts are manually collected at CMPHS intersections to initiate the ICU calculation process. The counts monitor the traffic flow, including the approach (northbound, eastbound, southbound, or westbound) and movement (left turn, through, or right turn) for each vehicle.

Each intersection has counts conducted in 15-minute increments, during peak periods in the AM (6:00-9:00) and PM (3:00-7:00) on three separate mid-week days (Tuesday, Wednesday, and Thursday). Counts are not taken during periods when irregular conditions exist (inclement weather, holidays, construction, etc.).

The highest count total during any four consecutive 15-minute count intervals within a peak period represents the peak-hour count set. For each intersection, a peak-hour count set is determined for each day's AM and PM peak period, resulting in a group of three AM peak-hour count sets and a group of three PM peak-hour count sets (one for each mid-week count day).

The group of AM peak-hour count sets is averaged, as is the group of PM peak-hour count sets. The results are the volumes used to determine AM and PM volume-to-capacity (V/C) ratios for each movement through the intersection. A number of assumptions determine the capacities for each movement.

An example of an assumption used to determine capacity is the saturation flow-rate, which represents the theoretical maximum number of vehicles that are able to move through an intersection in a single lane during a green light phase. In 1991, OCTA and the technical staff members from local and state agencies agreed upon a saturation flow-rate of 1,700 vehicles per lane per hour. However, other factors can adjust this assumption.

Such factors include right turn lanes, which can increase the saturation flow-rate by 15 percent in specific circumstances. Right turn overlaps (signalized right turn lanes that are

green during the cross traffic's left turn movements) and free right turns (lanes in which vehicles are allowed to turn right without stopping, even when the through signal is red) are some of the circumstances that will increase the saturation flow-rate. If right turns on red are permitted, a *de facto* right turn lane (approaches that do not have designated right turn lanes, but which are at least 19-feet wide and prohibit on-street parking during peak hours) may also increase the saturation flow rate.

Roadway capacity can also be reduced under certain conditions. For example, if a lane is shared for through and turn movements, the saturation flow-rate of 1,700 could be reduced. This occurs only when the turn movement volumes reach a certain threshold that is calculated for each intersection with shared lanes. The reduction represents the slower turning movements interfering with through movements.

Finally, bicycle and pedestrian counts are conducted simultaneously with vehicle counts. Saturation flow-rate calculations may be requested to factor in bicycle and pedestrian activity for effected lanes. These calculations shall use standard reductions in accordance with the most recent Highway Capacity Manual. Reductions are only considered when field observations indicate the presence of more than 100 pedestrians per hour on one leg of an intersection.

Once the V/C ratios are determined for each movement, critical V/C ratios are calculated. Conflicting movements determine which V/C ratios are included in the calculation of the critical V/C ratios. Conflicting movements represent a situation where a movement from one approach prevents a movement from the opposite approach. For example, if through movements are being made from the southbound approach, left turn movements cannot simultaneously be made from the northbound approach. For each set of opposing approaches (north/south and east/west), the two conflicting movements with the greatest summed V/C ratios are identified. These summed V/C ratios then become known as the critical V/C ratios.

OCTA and technical staff members from local and state agencies also agreed upon a lost time factor of 0.05 in 1991. The lost time factor represents the assumed amount of time it takes for a vehicle to travel through an intersection. For each intersection, the critical V/C ratios are summed (north/south + east/west), and the lost time factor is added to the sum, producing the ICU rating for the intersection.

Based on a set of ICU rating ranges, which were agreed upon by OCTA and technical staff members from local and state agencies, grades are assigned to each intersection. The grades indicate the LOS for intersections and are used to determine whether the intersections meet the performance standards described at the beginning of the chapter.

The 2023 LOS ratings for the CMP intersections have been mapped in Figure 3. A spreadsheet of the baseline and 2023 LOS ratings for the CMP intersections and corresponding ICU measurements is located in Figure 4.

Note that in Figure 4, Orange County's average ICU rating has improved over the baseline. Between 1991 and 2023, the average AM ICU improved from 0.67 to 0.55 (an improvement of 17.91 percent), and the PM ICU improved from 0.72 to 0.58 (an improvement of 19.44 percent). The ICU improvements indicate that Orange County agencies are effectively operating, maintaining, and improving the CMP Highway System.

Figure 3: 2023 CMP Intersection Level of Service

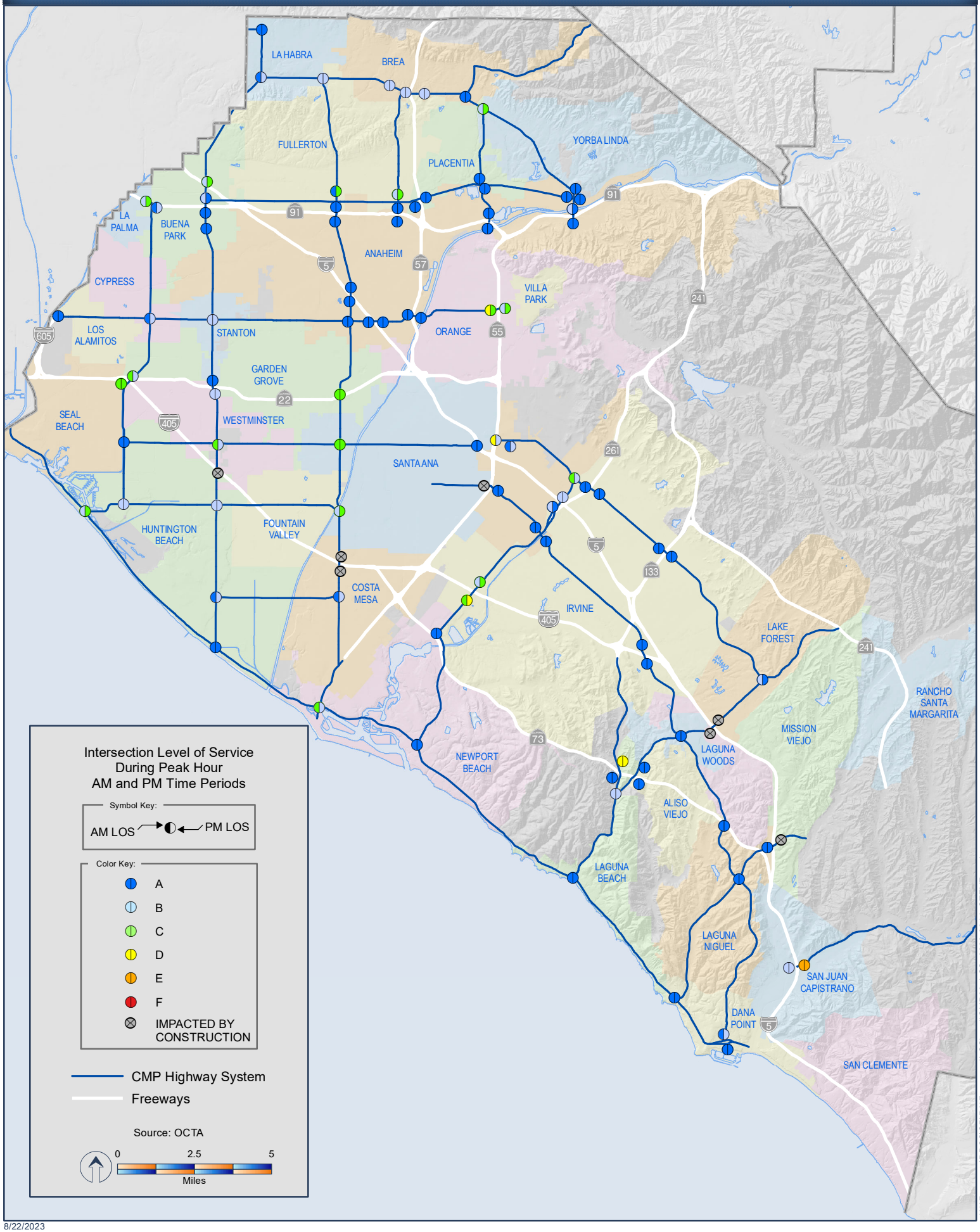

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FIGURE 4: 2023 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2023 AM LOS	2023 AM ICU	Baseline PM LOS	Baseline PM ICU	2023 PM LOS	2023 PM ICU
Anaheim	Anaheim Boulevard-I-5 NB Ramp/Katella Avenue	A	0.49	A	0.37	D	0.82	A	0.56
Anaheim	Harbor Boulevard/Katella Avenue	A	0.53	A	0.48	B	0.67	A	0.52
Anaheim	Harbor Boulevard/I-5 SB Ramps	A	0.29	A	0.29	A	0.31	A	0.34
Anaheim	Harbor Boulevard/SR-91 EB Ramps	A	0.46	A	0.42	A	0.52	A	0.48
Anaheim	I-5 NB Ramp/Harbor Boulevard	A	0.52	A	0.49	A	0.54	A	0.45
Anaheim	I-5 SB Ramps/Katella Avenue	A	0.48	A	0.47	A	0.41	A	0.52
Anaheim	SR-57 NB Ramps/Katella Avenue	A	0.51	A	0.34	A	0.41	A	0.41
Anaheim	SR-57 SB Ramps/Katella Avenue	A	0.52	A	0.37	A	0.51	A	0.46
Anaheim	SR-91 EB Ramp/Imperial Highway	C	0.73	A	0.54	C	0.79	A	0.58
Anaheim	SR-91 EB Ramps/State College Boulevard	B	0.69	A	0.5	D	0.82	A	0.51
Anaheim	SR-91 EB Ramps/Tustin Avenue	B	0.66	A	0.47	D	0.84	A	0.39
Anaheim	SR-91 WB Ramp/Harbor Boulevard	B	0.61	A	0.54	C	0.77	A	0.57
Anaheim	SR-91 WB Ramp/Imperial Highway	C	0.71	B	0.63	B	0.63	A	0.54
Anaheim	SR-91 WB Ramp/State College Boulevard	A	0.55	A	0.52	B	0.63	A	0.59
Anaheim	SR-91 WB Ramps/Tustin Avenue	B	0.64	A	0.58	A	0.6	A	0.57
Anaheim	Imperial Highway Off/SB On/Orangethorpe Avenue	A	0.32	A	0.41	A	0.39	A	0.39
Anaheim	Imperial Highway NB On/Orangethorpe Avenue	A	0.26	A	0.25	A	0.3	A	0.27
Anaheim	Imperial Highway/Orangethorpe Avenue Ramps	A	0.41	A	0.47	A	0.42	A	0.38
Brea	SR-57 SB Ramps/Imperial Highway	B	0.68	B	0.61	B	0.7	B	0.65
Brea	State College Boulevard/Imperial Highway	C	0.73	B	0.7	E	0.93	B	0.66
Brea	Valencia Avenue/Imperial Highway	A	0.56	A	0.42	A	0.59	A	0.47
Brea	SR-57 NB Ramp/Imperial Highway	C	0.78	B	0.64	E	0.91	B	0.69
Buena Park	Beach Boulevard/Orangethorpe Avenue	C	0.76	B	0.61	D	0.87	A	0.55
Buena Park	I-5 SB Ramps/Beach Boulevard	C	0.72	B	0.66	C	0.78	C	0.75
Buena Park	SR-91 EB Ramp/Beach Boulevard	C	0.74	A	0.59	D	0.84	A	0.57
Buena Park	SR-91 EB Ramp/Valley View Street	A	0.58	A	0.57	D	0.86	B	0.66
Buena Park	SR-91 WB Ramp/Beach Boulevard	A	0.58	A	0.45	A	0.59	A	0.48
Buena Park	SR-91 WB Ramp/Valley View Street	C	0.8	B	0.63	E	0.94	C	0.71
Costa Mesa	Harbor Boulevard/Adams Avenue	E	0.99	A	0.52	F	1.09	B	0.63
Costa Mesa	I-405 SB Ramps/Harbor Boulevard	A	0.53	Impacted by construction		B	0.63	Impacted by construction	
Costa Mesa	I-405 NB Ramps/Harbor Boulevard	E	0.95	Impacted by construction		F	1.07	Impacted by construction	
Cypress	Valley View Street/Katella Avenue	B	0.63	A	0.6	D	0.87	B	0.51
Dana Point	Crown Valley Parkway/Bay Drive/PCH	F	1.41	A	0.49	F	1.62	A	0.57
Dana Point	Street of the Golden Lantern/Del Prado Avenue	A	0.32	A	0.22	A	0.53	A	0.33
Dana Point	Street of the Golden Lantern/PCH	A	0.42	A	0.5	A	0.55	B	0.62
Fullerton	Harbor Boulevard/Orangethorpe Avenue	A	0.6	A	0.59	E	0.94	C	0.74
Fullerton	State College Boulevard/Orangethorpe Avenue	C	0.8	B	0.61	D	0.86	C	0.71
Garden Grove	SR-22 WB/Beach Boulevard	C	0.73	B	0.69	C	0.73	B	0.64
Garden Grove	SR-22 WB Ramp/Valley View Street	C	0.76	C	0.71	D	0.87	B	0.68
Garden Grove	SR-22 WB Ramps/Harbor Boulevard	F	1.1	C	0.78	F	1.16	C	0.72
Huntington Beach	Beach Boulevard/405 SB Ramp/Edinger Avenue	B	0.63	Impacted by construction		E	1.03	Impacted by construction	
Huntington Beach	Beach Boulevard/Adams Avenue	A	0.55	A	0.53	C	0.67	B	0.64
Huntington Beach	Beach Boulevard/PCH	A	0.45	A	0.51	A	0.47	A	0.56
Huntington Beach	Beach Boulevard/Warner Avenue	C	0.78	B	0.66	E	0.93	B	0.61
Huntington Beach	Bolsa Chica Street/Bolsa Avenue	B	0.66	A	0.47	A	0.53	A	0.53
Huntington Beach	Bolsa Chica Street/Warner Avenue	A	0.57	B	0.62	D	0.81	B	0.62

FIGURE 4: 2023 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2023 AM LOS	2023 AM ICU	Baseline PM LOS	Baseline PM ICU	2023 PM LOS	2023 PM ICU
Huntington Beach	PCH/Warner Avenue	D	0.81	B	0.68	B	0.72	C	0.71
Irvine	SR-133 NB Ramps/Irvine Boulevard	A	0.37	A	0.49	A	0.33	A	0.58
Irvine	SR-133 SB Ramps/Irvine Boulevard	A	0.37	A	0.46	A	0.29	A	0.5
Irvine	SR-261 NB Ramps/Irvine Boulevard	A	0.38	A	0.35	A	0.53	A	0.5
Irvine	SR-261 SB Ramps/Irvine Boulevard	A	0.42	A	0.37	A	0.4	A	0.43
Irvine	I-405 NB Ramps/Enterprise/Irvine Center Drive	E	0.95	A	0.48	A	0.39	A	0.59
Irvine	I-405 NB Ramps/Jamboree Road	F	1.03	B	0.61	C	0.78	C	0.71
Irvine	I-405 SB Ramps/Irvine Center Drive	E	1	A	0.47	A	0.57	A	0.48
Irvine	I-405 SB Ramps/Jamboree Road	E	0.92	C	0.8	B	0.66	D	0.83
Irvine	I-5 NB Ramps/Jamboree Road	A	0.54	B	0.68	C	0.75	B	0.68
Irvine	I-5 SB Ramps/Jamboree Road	A	0.4	B	0.65	A	0.35	A	0.55
Irvine	MacArthur Boulevard/Jamboree Road	B	0.61	A	0.45	B	0.69	A	0.53
La Habra	Harbor Boulevard/Imperial Highway	D	0.81	B	0.62	D	0.86	B	0.62
La Habra	Beach Boulevard/Imperial Highway	D	0.85	A	0.51	D	0.87	B	0.63
La Habra	Beach Boulevard/Whittier Boulevard	A	0.33	A	0.44	A	0.29	A	0.49
Laguna Beach	El Toro Road/SR-73 NB Ramps	E	0.91	A	0.53	A	0.59	A	0.59
Laguna Beach	El Toro Road/SR-73 SB Ramps	A	0.41	A	0.43	B	0.67	A	0.54
Laguna Beach	Laguna Canyon Rd/SR-73 NB Ramps	C	0.73	D	0.89	C	0.72	D	0.87
Laguna Beach	Laguna Canyon Rd/SR-73 SB Ramps	A	0.32	A	0.35	A	0.33	A	0.39
Laguna Beach	Laguna Canyon Road/El Toro Road	F	1.54	B	0.68	F	1.16	B	0.61
Laguna Beach	Laguna Canyon Road/PCH	D	0.84	A	0.6	C	0.74	A	0.58
Laguna Hills	I-5 SB Ramp/Avenida de la Carlotta/El Toro Road	F	1.18	Impacted by construction		F	1.13	Impacted by construction	
Laguna Niguel	Moulton Parkway/SR-73 SB Ramps	A	0.45	A	0.36	A	0.38	A	0.39
Laguna Niguel	Moulton Parkway/Crown Valley Parkway	A	0.56	A	0.53	B	0.65	A	0.54
Laguna Niguel	I-5 SB Ramps/Crown Valley Parkway	E	0.94	A	0.54	F	1.26	A	0.59
Laguna Woods	Moulton Parkway/El Toro Road	A	0.56	A	0.5	D	0.81	A	0.57
Lake Forest	I-5 NB/Bridger/El Toro Road	F	1.03	Impacted by construction		C	0.8	Impacted by construction	
Lake Forest	Trabuco Road/El Toro Road	B	0.69	B	0.64	B	0.65	A	0.58
Los Alamitos	I-605 NB Ramps/Katella Avenue	B	0.68	A	0.35	B	0.69	A	0.49
Mission Viejo	I-5 NB Ramps/Crown Valley Parkway	D	0.86	Impacted by construction		F	1.01	Impacted by construction	
Newport Beach	MacArthur Boulevard/PCH	A	0.51	A	0.49	B	0.7	A	0.57
Newport Beach	Newport Boulevard/PCH	A	0.56	C	0.79	A	0.49	B	0.63
Orange	SR-55 NB Ramps/Sacramento/Katella Avenue	C	0.75	B	0.67	D	0.85	C	0.78
Orange	SR-55 SB Ramps/Katella Avenue	C	0.73	D	0.87	E	0.95	C	0.77
Placentia	Rose Drive/Imperial Highway	E	0.95	B	0.65	E	0.99	C	0.8
Placentia	SR-57 NB Ramps/Orangethorpe Avenue	B	0.67	A	0.47	C	1.03	A	0.53
Placentia	SR-57 SB Ramps/Iowa Place/Orangethorpe Avenue	C	0.74	A	0.46	B	0.8	A	0.45
Placentia	Del Cerro Dr/Orangethorpe Ave	A	0.29	A	0.24	A	0.69	A	0.27
Placentia	Rose Dr/Del Cerro Dr	A	0.59	A	0.51	A	0.69	A	0.47
San Juan Capistrano	I-5 NB Ramps/Ortega Highway	A	0.52	E	0.94	A	0.51	E	0.94
San Juan Capistrano	I-5 SB Ramps/Ortega Highway	B	0.61	B	0.63	C	0.58	B	0.69
Santa Ana	Harbor Boulevard/1st Street	A	0.48	C	0.77	D	0.77	C	0.79
Santa Ana	Harbor Boulevard/Warner Avenue	E	0.93	B	0.69	E	0.81	C	0.74
Santa Ana	I-5 SB Ramps/1st Street	A	0.29	A	0.43	A	0.98	A	0.49
Santa Ana	SR-55 SB Ramp/Auto Mall/Edinger Avenue	D	0.9	Impacted by construction		F	0.46	Impacted by construction	
Santa Ana	SR-55 SB Ramps/Irvine Boulevard	B	0.68	D	0.82	D	1.06	B	0.68

FIGURE 4: 2023 CMP Level of Service Chart

Jurisdiction	Intersection/Interchange	Baseline AM LOS	Baseline AM ICU	2023 AM LOS	2023 AM ICU	Baseline PM LOS	Baseline PM ICU	2023 PM LOS	2023 PM ICU
Stanton	Beach Boulevard/Katella Avenue	D	0.89	B	0.64	F	0.83	B	0.64
Tustin	Jamboree Road/Edinger Avenue-NB Ramp	A	0.28	A	0.36	A	0.32	A	0.49
Tustin	Jamboree Road/Edinger Avenue-SB Ramp	D	0.81	A	0.36	A	0.41	A	0.49
Tustin	Jamboree Road/Irvine Boulevard	B	0.65	C	0.74	A	0.59	B	0.67
Tustin	SR-55 NB Ramps/Edinger Avenue	C	0.72	A	0.39	B	0.65	A	0.58
Tustin	SR-55 NB Ramps/Irvine Boulevard	A	0.59	A	0.6	A	0.45	B	0.66
Westminster	SR-22 EB/Beach Boulevard	A	0.53	A	0.54	A	0.54	A	0.47
Westminster	Beach Boulevard/Bolsa Avenue	F	1.09	C	0.77	F	1.11	B	0.66
Westminster	Bolsa Chica Road/Garden Grove Boulevard	E	0.91	C	0.8	E	0.97	C	0.79
	COUNTY AVERAGE		**0.67**		**0.55**		**0.71**		**0.58**

Deficiency Plans

If an intersection does not meet LOS standards, then a deficiency plan is required, as described under California Government Code Section 65089.4. The deficiency plan identifies the cause of congestion, the improvements needed to solve the problem, and the cost and timing for implementing proposed improvements.

A deficiency plan process was developed by the CMP Technical Advisory Committee to provide local jurisdictions with a framework for maintaining compliance with the CMP when a portion of the CMPHS fails to meet its established LOS standard (Appendix C-1). The Deficiency Plan Decision Flow Chart (Appendix C-2) illustrates the individual steps that must be taken in order for a local jurisdiction to meet CMP deficiency plan requirements.

Deficiency plans are not required if a deficient intersection is brought into compliance within 18 months of its initial detection, using improvements that have been previously planned and programmed in the CMP Capital Improvement Program. In addition, CMP legislation specifies that the following shall be excluded from deficiency determinations:

- Interregional travel (trips with origins outside the Orange County CMPHS)
- Construction, rehabilitation, or maintenance of facilities that impact the system
- Freeway ramp metering
- Traffic signal coordination by the State or multi-jurisdictional agencies
- Traffic generated by the provision of low-income and very low-income housing
- Traffic generated by high-density residential development located within one-quarter mile of a fixed-rail passenger station
- Traffic generated by any mixed-use development located within one-quarter mile of a fixed-rail passenger station, but only if more than half of the land area, or floor area, of the mixed-use development is used for high-density residential housing.

Per §65089.4, the following three CMP intersections have adjustment factors applied to their traffic counts as a result of interregional travel:

- *Beach Boulevard/Whittier Boulevard (City of La Habra)*
- *Beach Boulevard/Imperial Highway (City of La Habra)*
- *Harbor Boulevard/Imperial Highway (City of La Habra)*

There are no intersections exceeding the CMP level of service standard in 2023.

Transit System Performance Measures

As Orange County's transit provider, OCTA continually monitors the frequency and routing of its transit services. Bus and rail transit are essential components of Orange County's transportation system and are important tools for achieving a balanced and equitable multimodal transportation system capable of maintaining level of service standards.

The CMP performance measures provide an index of the effectiveness and efficiency of Orange County's fixed-route bus and commuter rail services. ACCESS, OCTA's complementary paratransit service, is not reported separately because it is an extension of the fixed-route service. The CMP performance measures are used to help ensure that bus and rail services meet demand.

Post-Pandemic Bus Service

In March 2020, federal and state emergency declarations were issued to help reduce the spread of the coronavirus (COVID-19). This resulted in reduced demand for public transit with ridership declining from approximately 125,000 boardings per day to the low 30,000s. In response, OCTA implemented an emergency service change on March 23, 2020, that reduced bus service to approximately 40 percent of the pre-pandemic levels. Since that time, bus ridership levels have steadily recovered and are now in the mid-60,000's.

Fixed-Route Bus Service

OCTA's fixed-route bus service includes local routes, community routes, limited-stop/Bus Rapid Transit (BRT) routes, rail feeder and shuttle routes.

- Local routes (numbered 1 to 99) operate primarily along arterial corridors serving multiple bus stops spaced about 1/4–mile apart, serving multiple destinations such as residential areas, employment centers, educational institutions, and health care facilities. They are the most heavily used bus routes and, in many cases, require additional trips during peak commute periods. OCTA also provides Xpress service which are local routes with limited-stop trips.

- Community routes (numbered 100 to 199) are typically shorter distance services that may act as community circulators and are less direct compared to the local routes. They often provide connections to the local and express bus network. Community routes typically operate throughout the service day.
- Rail feeder/Stationlink routes (numbered 400 to 499) provide first and last mile trips during peak hours to and from employment centers for commuters using Metrolink commuter rail service. Feeder trips are scheduled to match specific train trips and, like express routes, operate only during commute hours.
- Limited-stop/BRT routes (numbered 500 to 599) provide trips with higher average speeds and connect with other OCTA bus networks and modes. The speed advantage is realized by making fewer stops which are spaced about a three-fourth-mile to one mile apart. Local bus riders making longer distance trips are among the transit users that are attracted to limited-stop/BRT service. Like local and community routes, these services operate throughout the service day.
- Shuttle routes (numbered 600 to 699) serve special event venues or provide additional connections to community points of interest as a traffic mitigation tool. Shuttle routes may be point-to-point and seasonal in nature such as OCTA's Orange County Fair Express network or confined to a single community perhaps using a short distance circular route structure.
- Circulator Shuttle routes (numbered 800 to 899) typically provide short-distance connections to local business on a frequent timed headway. Route 862 is an example implemented to connect the Santa Ana Regional Transportation Center to the Santa Ana Downtown area while the OC Streetcar is under construction. The alignment and timed headway of Route 862 is similar to the planned OC Streetcar service and will help to acclimate riders to transition to the OC Streetcar upon its opening.

OCTA's pre-pandemic fixed-route bus service had a total of 58 routes. The network was comprised of 36 local routes, five express routes (two intra- and three inter-county routes), eight community routes, three limited-stop routes, five rail feeder routes, and one circulator shuttle. To adjust for impacts due to COVID-19, OCTA reduced fixed-route bus service to 41 routes, approximately 40 percent of revenue vehicle hours (RVH), by implementing Sunday service schedules on all routes, seven days a week.

Currently, OC Bus Service has a total of 52 routes. The network is comprised of 36 local routes, seven community routes, four limited-stop routes, four rail-feeder routes, and one circulator shuttle as listed above.

Meeting Transit Service Challenges

The lack of ongoing operating revenues, competing resources (e.g., increasing resources dedicated to paratransit costs), decreases in ridership, and impacts from COVID-19 in recent years have all contributed to an increasing set of challenges. Improvement priorities include addressing vehicle loads, headways, on-time performance, and service accessibility. The following studies highlight OCTA's efforts to address priorities and identifying equitable system improvements where appropriate.

Making Better Connections Study

The Making Better Connections Study examined aligning the transit system design with post pandemic travel patterns, improving customer experience, and growing ridership. This was accomplished by:

- Improving service in the central urban core areas, such as Anaheim, Garden Grove, and Santa Ana.
- Improving service in the peripheral suburban areas of the County where lower ridership and frequencies are experienced, designing trips to pulse or be timed at existing transit hubs, such as the Brea Mall and Laguna hills Transportation Center, to improve transfer wait times.
- Increasing service frequency and span, especially in the midday and weekend time periods.

The plan restores service to pre-pandemic levels equating to 390 weekday bus trips (+13% above 2021 service levels) and 275 weekend bus trips (+5 percent on Saturday and +9 percent on Sunday above 2021 service levels). These adjustments allow for more frequent service, better connections, and more hours of service for 89 percent of OC Bus riders. The remaining 10 percent of riders will experience no changes and less than 1 percent of riders will be located more than ½ mile from a bus stop.

To ensure that the plan meets current available resources and demand, OCTA adopted a phasing plan to implement improvements from February 2023 to May 2025, which will coincide with OCTA's quarterly Service Changes.

2024 OC Transit Vision

The OC Transit Vision is OCTA's 30-year plan to improve transit services in the County. It informs the OCTA LRTP building upon the 2018 OC Transit Vision. This is accomplished by:

- Incorporating the Making Better Connections Study (2022)
- Updating ridership trends and travel patterns since the pandemic

- Reviewing 2018 transit opportunity corridors with possible revisions to recommendations
- Exploring emerging transit technologies and travel modes; and
- Recommending an action laying out the next steps for OCTA

The 2024 OC Transit Vision will establish OCTA's vision, goals, and framework for future transit investments in Orange County, including the identification of corridors recommended for high-quality transit.

It will also look at transit-related recommendations for the fixed-route bus service, paratransit, microtransit, first/last mile considerations, pedestrian friendly/human oriented development, and policy guidance to cities, developers, and other stakeholders providing next steps for OCTA.

Performance Measures

The following section describes OCTA's transit performance measures for vehicle load, vehicle headway, on-time performance, and service accessibility. These performance measures are used to evaluate the effectiveness of transit service provided by OCTA.

Performance Measure 1: Vehicle Load

Vehicle load refers to the maximum number of passengers allowed on a service vehicle, expressed as the ratio of passengers to the number of seats on the vehicle and varied by mode and by time of day. OCTA monitors vehicle load to help ensure the safety and comfort of customers. All pre-pandemic bus routes have less than 100 percent average peak loads based on an analysis of 2022 Automatic Passenger Counter data (*OCTA's APC Ridership Dashboard*).

During COVID-19, to maintain social distance and protect the safety of riders, OCTA initiated a 15-passenger capacity. This limit was commonly set by many transit agencies and equated to less than half of the seated load (36 passengers per 40' bus). These precautions were accompanied with face covering requirements, hand sanitizers stations installed on all buses, rear door boarding, and signage marketing these precautions. These precautions complied with local, state, and federal guidelines, recommendations from the American Public Transportation Association subcommittees, and the availability of resources to use trippers to mitigate capacity limitation impacts (pass-bys due to overcrowding).

After the installation of plexiglass shields for coach operators, OCTA switched back to all door boarding and increased bus capacity to 20-passengers. OCTA's approach was to leave an empty seat between each passenger (50 percent of the seated capacity equaling 18 passengers). To account for groups that may ride together, staff assumed two to three

of June 15th, 2021, state and local distancing measures were lifted, and OCTA has reinstated regular passenger load standards.

Performance Measure 2: Vehicle Headway

Vehicle headway is the time interval between vehicles on a route that allows passengers to gauge how long they will have to wait for the next vehicle. Vehicle headway varies by mode and time of day and is primarily determined by bus ridership. However, it is also limited by the availability of resources to operate the system. To keep up with changing conditions and to make improvements to service, OCTA continually monitors ridership along routes and their respective headways. This process generally results in an identification of improvement priorities pending funding availability.

Due to the impact of COVID-19, OCTA responded with a frequency reduction to account for the drop in demand for transit service. However, where passenger loads exceeded OCTA's COVID-19 capacity considerations (described above), trippers were used to ensure social distancing measures were met with approximately 130 extra trippers per day.

Peak Weekday Vehicle Headways

Service	≤15 Min.	16 – 30 min.	>30 min.	Timed to Metrolink Trains
Local Routes	5	15	16	0
BRT / Limited*	0	4	0	0
Community Routes	0	0	7	0
Circulator Shuttle Routes	1	0	0	0
Rail Feeder Routes	0	0	0	4

**BRT routes plus their family local routes provide less than 15-minute service headways on their shared alignments.*

Performance Measure 3: On-Time Performance (OTP)

OCTA defines OTP as not more than five minutes late. OTP is measured at the time point. A trip is on-time if it does not leave the time point ahead of the scheduled departure time and no more than five minutes later than the scheduled departure time. Systemwide OTP for fiscal year (FY) 2022-23 was 82 percent.

Performance Measure 4: Service Accessibility

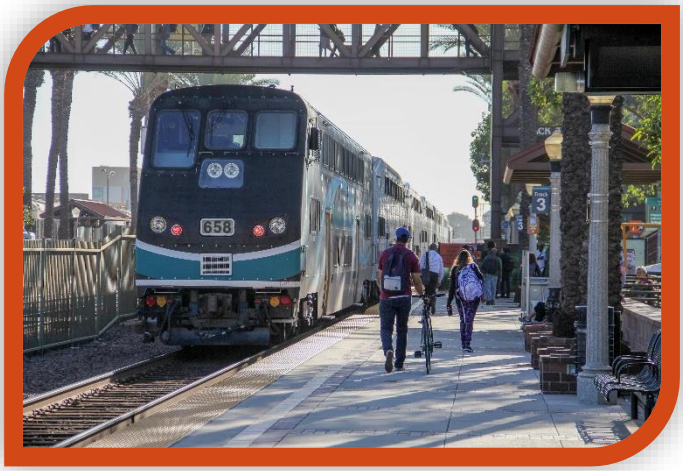
Service accessibility is the percentage of population and employment in proximity to bus service. A review of service accessibility conducted in 2020 shows that 86.5 percent of all population and employment, and 94.9 percent of population and employment within minority communities (census tracts with a minority population of 53.75 percent or greater), are within a half-mile of OCTA bus services.

Coordination of Transit Service with Other Carriers

OCTA coordinates the delivery of transit services with several transit agencies. They include the City of Laguna Beach, the City of Irvine, Riverside Transit Agency, Norwalk Transit System, Los Angeles County Metropolitan Transportation Authority, Long Beach Transit, Foothill Transit, North County Transit District, Omnitrans, Anaheim Transportation Network, various specialized charter bus services, and commuter rail services. OCTA also coordinates with cities during the planning and implementation of Project V community circulators. Additionally, internet-based services, such as Google transit, can often provide service schedules and identify available transfers between the various systems.

Commuter Rail Service

Metrolink is Southern California's commuter rail system that links residential communities to employment and activity centers. Metrolink is operated by the Southern California Regional Rail Authority (SCRRA), a joint powers authority of five member agencies representing the counties of Los Angeles, Orange, Riverside, San Bernardino, and Ventura.

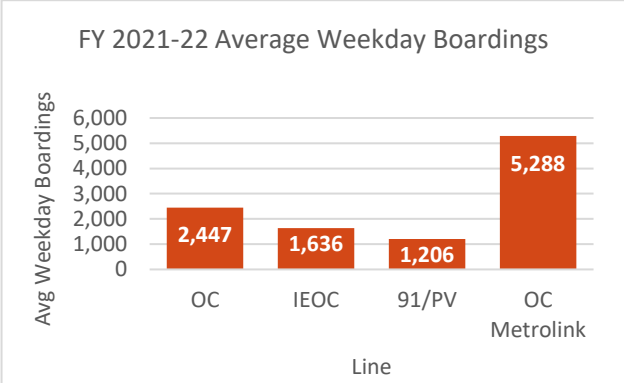


Post-Pandemic Metrolink Service

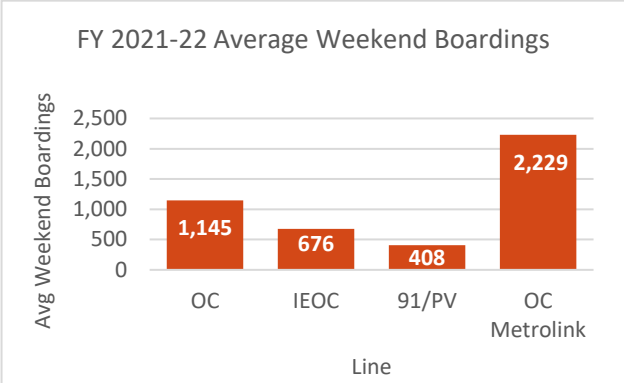
Metrolink's train ridership has faced significant challenges in its attempt to regain pre-pandemic levels. A significant number of Metrolink's pre-pandemic weekday riders utilized the train to commute to and from work. Reduced demand for public transportation services due to the pandemic, coupled with a shift in remote work has affected ridership for Metrolink. The following section highlights Metrolink ridership details.

As of 2023, Metrolink provides service on seven routes, covering 538 miles through six counties in Southern California. On an average weekday, there are 134 trains serving nearly 12,971 passenger trips at 61 stations. Orange County plays an important and growing role within this system.

As one of the five SCRRA member agencies, OCTA administers and funds Orange County's portion of the Metrolink commuter rail system. Orange County's share of Metrolink service covers 68 route miles and sees approximately 5,288 average weekday boardings, comprising more than 40 percent of Metrolink's total system-wide boardings. There are 11 stations in Orange County that serve a total of 45 one-way trips each weekday on three lines:



- **Orange County (OC) Line**: Daily service from Los Angeles Union Station to Oceanside;
- **Inland Empire-Orange County (IEOC) Line**: Daily service from San Bernardino and Riverside through Orange to Oceanside; and
- **91 / Perris Valley (91/PV) Line**: Daily service from South Perris through Riverside and Fullerton to Los Angeles Union Station.



In 2006, Metrolink Weekend service was introduced on the OC and IEOC lines, with increased service during the summer travel season. In July 2014, weekend service was added on the 91/PV Line, providing four trains between Riverside and Los Angeles Union Station. Weekend ridership varies considerably dependent upon the season and local events, but generally the OC, IEOC and 91/PV Lines combined carry a total of approximately 2,229 riders per weekend day.

OCTA and other local agencies provide free transfers to local bus service to deliver Metrolink passengers to their final destinations. OCTA has four dedicated StationLink bus routes that connect with Orange County Metrolink stations in Orange, Santa Ana, Tustin, and Irvine. The iShuttle in the City of Irvine has four routes that provide peak hour connections to and from the Tustin and Irvine stations. Anaheim Resort Transportation provides transfers at the Anaheim Regional Transportation Intermodal Center to various destinations. These local transit connections offer Metrolink ticket holders free, easy connections between stations and major employment and activity centers, with schedules designed to meet Metrolink weekday train arrivals and departures.

In addition to Metrolink, Amtrak's Pacific Surfliner provides daily service with 14 trains between Los Angeles Union Station and downtown San Diego as an alternative for commuters. Within Orange County, Amtrak station stops include Fullerton, Anaheim, Santa Ana, Irvine, San Juan Capistrano, and San Clemente Pier.

Transit Improvements

OCTA and partner agencies, such as Metrolink are working together to improve transit infrastructure in Orange County by undertaking capital improvement projects. In the fall of 2022, rail service in San Clemente was halted due to the effects of coastal erosion, which caused the tracks to move towards the ocean. In coordination with Metrolink, OCTA acted promptly to commence a track stabilization project to install ground anchor into the slope between the tracks and the Cyprus Shore community. OCTA is initiating the South Coast Rail Infrastructure Feasibility Study and Alternative Concepts Analysis, which will prioritize future planning efforts and identify short- and medium-term solutions to protect the track that abuts the ever-encroaching shoreline.

As the lead agency, Metrolink initiated the Southern California Optimized Rail Expansion Program (SCORE), a $10 billion capital improvement program that includes grade crossing, station and signal improvements as well as track additions across five counties. In efforts to meet the State's ambitious goals, the SCORE program seeks to reduce greenhouse gases and improve access to affordable housing and jobs. After implementation of capital improvements, Orange County is projected to experience $173.3 billion in GDP growth and 396,000 jobs added by 2050.

In addition to these capital improvements, OCTA, in partnership with Metrolink, completed the Anaheim Canyon Station Project in January, 2023. Improvements at the Anaheim Canyon station include a second passenger platform, new second track, and improved amenities at the station. These improvements ensure efficiency, safety, and an improved travel experience for all transit riders.

Chapter 4: Transportation Demand Management (TDM)

TDM strategies are intended to reduce the number of single-occupant vehicle trips, promote the use of transit and active transportation options, decrease overall trip lengths, and improve air quality. The adoption of a TDM ordinance was required from every local jurisdiction for Orange County's 1991 CMP. The adoption of these ordinances is no longer a statutory requirement; however, OCTA continues to encourage local jurisdictions to maintain these ordinances.

TDM Ordinances

The model TDM ordinance, prepared by OCTA, promotes carpools, vanpools, alternate work hours, park and ride facilities, teleworking, and other traffic reduction strategies. OCTA updated the model ordinance in 2001 to reflect the adoption of Rule 2202 by the SCAQMD, which requires employers with 250 or more employees at a worksite to develop an emission reduction program to help meet an emission reduction target set by the SCAQMD.

Principal provisions of the TDM model ordinance are as follows:

- Applies to non-residential public and private development proposals expected to generate more than 250 employees;
- Contains a methodology for determining projected employment for specified land-use proposals;
- Includes mandatory facility-based development standards (conditions of approval) that apply to proposals that exceed the established employment threshold;
- Presents optional provisions for implementing operational TDM programs and strategies that target the property owner or employer, and requires annual reporting on the effectiveness of programs and strategies proposed for facilities;

- Contains implementation and monitoring provisions; and
- Includes enforcement and penalty provisions.

Several jurisdictions have adopted ordinances that go beyond those contained in the model TDM ordinance. Such strategies include:

- Encouraging employers to establish and help subsidize telecommuting, provide monetary incentives for ridesharing, and implementing alternative work hour programs;
- Proposing that new development projects establish and/or participate in Transportation Management Associations (TMAs);
- Implementing bus loading facilities at worksites;
- Implementing pedestrian facilities such as sidewalks, paved pathways, and pedestrian grade separations over arterial streets to connect worksites to shopping, eating, recreation, parking, or transit facilities; and
- Participating in the development of remote parking facilities and the High Occupancy Vehicle (i.e., shuttles, etc.) to serve them.

Countywide TDM Strategies

TDM efforts in Orange County are not just limited to the implementation of the local TDM ordinance provisions. Development of a countywide TDM Strategic Plan is currently underway which aims to provide local jurisdictions with clear goals and guiding principles to encourage coordinated efforts on advancing TDM objectives. The plan will include a "Toolbox" of TDM strategies that address Orange County's unique transportation needs accompanied by an Action Plan detailing steps needed to deliver each TDM strategy. OCTA is committed to developing multimodal transportation plans to support a safe, sustainable, and equitable transportation system.

In addition to the development of the TDM Strategic Plan, OCTA completed the Orange County Mobility Hubs Strategy in the fall of 2022. Mobility hubs are identifiable places that facilitate more seamless, sustainable, and include travel experiences by co-locating regional and local travel modes and amenities. Travel modes include shared electric bikes (e-bikes), e-scooters, ride sharing, and public transportation services, amongst others. Mobility hubs serve to improve access and connectivity to transit stations, reduce congestion and automobile dependency, enhance active transportation, and create a more desirable experience for all public transit passengers.

Countywide services and programs, as described below, also help to manage demand on the multimodal system.

also provides community routes for connecting to the local bus networks, limited-stop Bravo! routes, and on-demand OC Flex service. OC ACCESS is OCTA's shared-ride service for people who are unable to use fixed-route bus service because of functional limitations caused by a disability. These passengers must be certified by OCTA to use the ACCESS system by meeting the Americans with Disabilities Act (ADA) eligibility criteria.

OCTA Vanpool Program

The OCTA Vanpool Program assists commuters working in Orange County. OCTA coordinates with commuters, employers, and private vanpool operators to organize and sustain vanpools, and provides a monthly subsidy for each vanpool to offset vehicle lease and maintenance costs. In addition to Caltrans-maintained park-and-ride lots, OCTA maintains park-and-ride lots throughout the County and supports the Guaranteed Ride Home Program. OCTA provides trip planning tools online and by phone through the 511 service. OCTA has also provided the necessary data to Google Transit® to integrate trip planning with other Southern California transit operators. These efforts are designed to reduce single-occupancy commuting.

Transportation Management Associations

TMAs are comprised of groups of employers who work together to solve mutual transportation problems by implementing programs to increase average vehicle ridership. Presently, Orange County has TMAs located in the following areas:

- Irvine (Spectrumotion): Offers free rideshare services for the Irvine Spectrum area to employees, residents students, and employers, therefore, reducing single occupancy vehicle trips.
- Anaheim (Anaheim Transportation Network): Offers additional bus service within the Anaheim Resort District and surrounding areas.

Park-and-Ride Lots

Park-and-ride lots serve as transfer points for commuters to change from one mode of travel (usually single-occupancy automobile) to another, higher capacity mode (bus, train, carpool, or vanpool). Providing a convenient system of park-and-ride transfer points throughout Orange County encourages ridesharing and the use of higher capacity transit systems, which improves the efficiency of the transportation system. Park-and-ride lots are also a natural companion to Orange County's network of managed lanes (carpool and Express lanes) on the freeways.

Currently there are 16 park-and-ride lots in Orange County providing 2,598 parking spaces. Of the 16 lots, five are located at OCTA transit centers, which account for 1,401 parking spaces. Five lots are owned by Caltrans accounting for 979 spaces. The remaining 218 spaces are provided by private and local jurisdiction owned park and ride lots.

Parking Cash-Out Programs

Parking cash-out programs are employer-funded programs that provide cash incentives to employees who do not drive to work. The most effective programs provide an incentive equal to the full cost of employee parking. State law requires certain employers who provide subsidized parking for their employees to offer a parking cash-out program that offers a cash allowance in lieu of a parking space. The intent is to reduce single-occupant vehicle commute trips and emissions by offering employees a cash incentive for not driving and parking their personal automobile.

Guaranteed Ride Home Program

Employers throughout Orange County have the option to participate in OCTA's Guaranteed Ride Home Program. This program provides reliability for those who rideshare but are faced with an unexpected illness, at-home emergency, or unexpected overtime.

Complete Streets

On September 30, 2008, Governor Arnold Schwarzenegger signed AB 1358 (Chapter 657, Statutes of 2008), the California Complete Streets Act. The Act states: "In order to fulfill the commitment to reduce greenhouse gas emissions, make the most efficient use of urban land and transportation infrastructure, and improve public health by encouraging physical activity, transportation planners must find innovative ways to reduce VMT and to shift from short trips in the automobile to biking, walking and use of public transit."

The legislation impacts local general plans by adding the following language to Government Code Section 65302(b)(2)(A) and (B):

> (A) Commencing January 1, 2011, upon any substantial revision of the circulation element, the legislative body shall modify the circulation element to plan for a

balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.

(B) For the purposes of this paragraph, "users of streets, roads, and highways" means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

As identified in OCTA's Pedestrian Action Plan, OCTA staff has developed a Complete Streets Checklist to consider bicycle and pedestrian accommodation in projects planned and designed by OCTA. This provides a method to illustrate decision-making and transparency in ultimate design outcomes and avoid conflict when a project is ready for construction. Furthermore, the Orange County Council of Governments Complete Streets Initiative Design Handbook serves as another resource for both OCTA staff and Orange County's local agencies that identifies best practices for complete street design specific to the Orange County context.

Active Transportation

In 2021, the League of American Bicyclists renewed their designation of Orange County as a bronze-level bike friendly community. This was in recognition of the collective county-level and local efforts to improve conditions for bicycling in Orange County. This includes countywide regional bikeway planning, recent bicycle and pedestrian safety marketing campaigns, and encouraging first/last mile linkages to transit for both bicyclists and pedestrians. In support of these efforts, OCTA allocates funding to local agencies through the Complete Streets call for projects.

The broad serving active transportation program addresses topics serving people bicycling and walking. Completed in 2019, OC Active is the countywide active transportation plan. OC Active includes the first effort to analyze pedestrian needs throughout Orange County. OC Active provides maps of high need pedestrian areas and maps of future bikeways for each jurisdiction. The plan guides active transportation

investments and enables local agencies to secure funding for infrastructure and non-infrastructure improvements countywide.

OCTA completed its Bicycle Gap Closure study in the summer of 2023. This project identified a south and central OC Loop as well as a cross county OC Connect to complement the existing north OC Loop, developed a project brand, and in coordination and partnership with the public and participating cities, developed costs and concepts for gaps in bicycle infrastructure within the proposed loops. This plan provides greater refinement for a portion of the regional bikeways network as well as developing costs, concepts, and fact sheets to assist cities in their pursuit of grant funding for implementation.

Further efforts by OCTA have been centered around Safe Routes to School (SRTS) programming in the form of OCTA's SRTS Action Plan and Safe Travels Education Program campaign. Work focused on providing SRTS activities and programming directly to schools that serve disadvantaged communities as well as developing a strategic plan for implementing a countywide SRTS Program.

Forthcoming work includes continued encouragement activities within local communities, e-bike safety planning and coordination efforts, an expanded bicycle counts program, first and last mile bicycle planning, and infrastructure safety evaluation.

Motorist Aid and Traffic Information System (511)

Orange County's 511 service is a one-stop source for up-to-the-minute travel information, advisories, and trip planning information. Traffic and transit updates are provided via the free Go511 application, calling 511, or visiting Go511.com.

The 511 Motorist Aid and Travelers' Information System helps commuters outsmart traffic with the following services:

- Real-time traffic speed, congestion and incident information
- Live freeway cameras and roadwork advisories
- Bus and rail trip planner
- Scheduled departures for 70+ transit agencies in SoCal
- Carpool and ride matching information
- Park and Ride lot locations (website/phone)
- Airport information (website only)
- Bike maps, tips and resources (website only)
- Local weather conditions (website only)

The 511 system can be accessed around the clock throughout Orange County by calling 511. Accessing the Go511 system from other surrounding counties is also available by calling 877.22.go511.

Freeway Construction Mitigation

OCTA and Caltrans developed a comprehensive public outreach program for commuters impacted by construction projects and improvements on Orange County freeways. The outreach program alleviates traffic congestion during freeway construction by providing up-to-date ramp, lane, and bridge closure information as well as suggestions for alternate routes and travel modes.

Outreach efforts include public workshops, open houses, fast fax construction alerts, flyers, and newsletters, as well as other materials and presentation events. Also, OCTA's website (www.octa.net), and the Orange County Freeway Construction Helpline (1-800 724-0353), make detour and closure information available. In addition, most jurisdictions implement traffic management plans to alleviate roadway congestion during construction.

Chapter 5: Land-Use Impact Analysis

The CMP TIA measures impacts of proposed development projects on the CMPHS. In the past, Orange County's jurisdictions were allowed to select either the process outlined in the CMP TIA guidelines (Appendix B-1), or their previously existing traffic-environmental analysis process, so long as consistency was maintained with the CMP TIA Guidelines.

Today, the traffic-environmental analysis process under CEQA no longer considers traffic delay and, instead, recommends a VMT analysis as the measure for identifying transportation impacts (as discussed under State Legislation, pg. 8). Nevertheless, all jurisdictions in Orange County are expected to also comply with the CMP by following a process consistent with the CMP TIA guidelines for the purpose of maintaining Orange County's highway system performance. The selected TIA process must be consistently applied to all development projects meeting the adopted trip generation thresholds. Traffic impact analyses focus on:

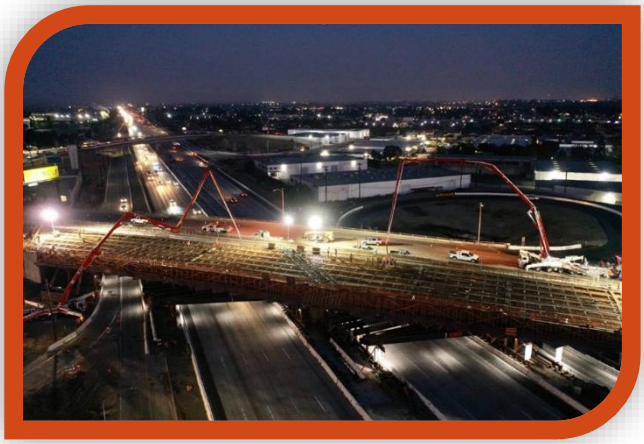
- Identifying CMPHS impacts that could result from trips generated by the proposed project;
- Assessing feasible mitigation strategies capable of reducing the identified impacts, thereby maintaining the LOS standard; and,
- Utilizing existing environmental processes and inter jurisdictional forums to conduct cooperative, interjurisdictional discussion when proposed CMP mitigation strategies include modifications to roadway networks beyond the lead jurisdiction's boundaries; and/or, when a proposed development will increase traffic at CMPHS locations outside the jurisdiction's boundaries.

OCTA does allow exemptions from this requirement for selected categories of development projects, consistent with state legislation (Appendix B-2 for a listing of exempt projects).

Chapter 6: Capital Improvement Program

The Capital Improvement Program (CIP) is a seven-year plan of projects and programs that is adopted by each Orange County jurisdiction and integrated into a countywide CIP by OCTA. It includes projects that will help to maintain or improve traffic conditions on the CMPHS and adjacent facilities. In addition to traditional capital projects, which preserve investments in existing facilities, the CIP may include projects that increase the capacity of the multimodal system and provide air quality benefits, such as active transportation projects. Consistency with statewide standards is emphasized in order for projects in the CIP to compete for state funding.

The CIP projects, prepared by local jurisdictions for inclusion in the Orange County CMP, mitigate transportation impacts identified in the Land-Use Impact Analysis component of the CMP, and preserve and maintain CMPHS infrastructure. Many types of CIP projects have been submitted by local jurisdictions in the past, including roadway and intersection improvements, signal coordination projects, and roadway resurfacing projects.



Each Orange County jurisdiction's CIP is included in Appendix E, which is published separately and provided on OCTA's website at . All projects in the CIP that are state or federally funded, or locally funded but of regional significance, are included in the Orange County portion of the Federal Transportation Improvement Program (FTIP). These projects are consistent with the Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), which are prepared and adopted by SCAG.

Projects that significantly increase single occupant vehicle (SOV) capacity in the region are monitored and regulated by the federal government and should be developed consistent with the federal Congestion Management Process. In carrying out this process, SCAG identifies SOV capacity increasing projects in the FTIP that are at least one-mile in length. These projects, if at least partially funded by federal sources, require the lead agency to document and demonstrate the consideration of alternative Transportation Systems

Management/TDM strategies during the alternatives analysis. Those that are considered safety, operational, or bottleneck improvements are exempt from this process.

Lastly, based upon a resolution by the California Transportation Commission (G-17-22), the M2 program of projects is being included in the 2023 CMP (by reference) in order to satisfy the CMP requirement of this resolution. For a listing of the M2 program of projects please see Appendix F.

Chapter 7: CMP Conformance

As Orange County's CMA, OCTA is legislatively required to monitor the implementation of all elements of the CMP, and biennially determine conformance. In so doing, OCTA consults with local jurisdictions.

OCTA determines if the local jurisdictions are in conformance with the CMP by monitoring the following:

- Consistency with LOS standards;
- Adoption of CIPs;
- Adoption and implementation of a program to analyze the impacts of land-use decisions, including an estimate of the costs associated with mitigating those impacts; and
- Adoption and implementation of deficiency plans when highway and roadway level of service standards are not maintained.

OCTA gathers local traffic data to determine the LOS at intersections throughout the CMPHS, as discussed in Chapter 2. In addition, the local jurisdictions complete a set of checklists, developed by OCTA, that guide them through the CMP conformity process (Appendix D). The checklists address the legislative requirements of the CMP, including Land-Use Coordination, the Capital Improvement Program, and transportation demand management strategies.

Based on the LOS data and the completed CMP checklists, the following determinations were made:

LOS

The LOS data, collected by OCTA, was provided to local jurisdictions for verification. The data shows that all local jurisdictions are in compliance with the established LOS standards.

Capital Improvement Program

All local jurisdictions submitted adopted seven-year capital improvement programs. The CIPs included projects to maintain or improve the traffic LOS on the CMPHS, or adjacent facilities which benefit the CMPHS.

Land-Use Coordination

All local jurisdictions have adopted CMP TIA processes for analyzing the impacts of land-use decisions on the CMPHS. All local jurisdictions have applied their TIA processes to development projects that met the CMP minimum threshold of 2,400 or more daily trips (1,600 or more trips per day for development projects that will directly access the CMPHS).

Deficiency Plans

Based on the data exhibited in Figure 3, all non-exempt intersections on the CMP highway system were found in compliance with LOS requirements. Therefore, no deficiency plans were required for the 2023 CMP.

Regional Consistency

To ensure consistency between CMPs within the SCAG region, OCTA submits each biennial update of the Orange County CMP to SCAG. As the regional agency, SCAG evaluates consistency with the RTP/SCS and with the CMPs of adjoining counties, and incorporates the program into the FTIP, once consistency is determined.

FIGURE 5: Summary of Conformance

Jurisdiction	Capital Improvement Program	Deficiency Plan	Land Use	Level of Service	2023 Compliance
Aliso Viejo *	Yes	N/A	Yes	N/A	Yes
Anaheim	Yes	N/A	Yes	Yes	Yes
Brea	Yes	N/A	Yes	Yes	Yes
Buena Park	Yes	N/A	Yes	Yes	Yes
Costa Mesa	Yes	N/A	Yes	Yes	Yes
Cypress	Yes	N/A	Yes	Yes	Yes
Dana Point	Yes	N/A	Yes	Yes	Yes
Fountain Valley *	Yes	N/A	Yes	N/A	Yes
Fullerton	Yes	N/A	Yes	Yes	Yes
Garden Grove	Yes	N/A	Yes	Yes	Yes
Huntington Beach	Yes	N/A	Yes	Yes	Yes
Irvine	Yes	N/A	Yes	Yes	Yes
La Habra	Yes	N/A	Yes	Yes	Yes
La Palma*	Yes	N/A	Yes	N/A	Yes
Laguna Beach	Yes	N/A	Yes	Yes	Yes
Laguna Hills	Yes	N/A	Yes	Yes	Yes
Laguna Niguel	Yes	N/A	Yes	Yes	Yes
Laguna Woods	Yes	N/A	Yes	Yes	Yes
Lake Forest	Yes	N/A	Yes	Yes	Yes
Los Alamitos	Yes	N/A	Yes	Yes	Yes
Mission Viejo	Yes	N/A	Yes	Yes	Yes
Newport Beach	Yes	N/A	Yes	Yes	Yes
Orange	Yes	N/A	Yes	Yes	Yes
Placentia	Yes	N/A	Yes	Yes	Yes
Rancho Santa Margarita *	Yes	N/A	Yes	N/A	Yes
San Clemente *	Yes	N/A	Yes	N/A	Yes
San Juan Capistrano	Yes	N/A	Yes	Yes	Yes
Santa Ana	Yes	N/A	Yes	Yes	Yes
Seal Beach *	Yes	N/A	Yes	N/A	Yes
Stanton	Yes	N/A	Yes	Yes	Yes
Tustin	Yes	N/A	Yes	Yes	Yes
Villa Park *	Yes	N/A	Yes	N/A	Yes
Westminster	Yes	N/A	Yes	Yes	Yes
Yorba Linda *	Yes	N/A	Yes	N/A	Yes
County *	Yes	N/A	Yes	N/A	Yes

*No CMP intersections within jurisdiction

Appendix A: Freeway Mobility Performance Reports

The following includes first Quarter Mobility Performance Reports for 2022 and 2023, comparing VMT, vehicle hours of delay, and other performance measures from the most recent quarter and the previous four quarters.

District 12
Mobility Performance Report

2022 1st Quarter

DEPARTMENT OF TRANSPORTATION

April 30, 2022

District 12 Traffic Operations Northwest

2022 1st Quarter

EXECUTIVE SUMMARY

Overview

Caltrans District 12 (Orange County) is located in southern California and is neighbors with District 7 (Los Angeles), District 8 (San Bernardino), and District 11 (San Diego). As of April 1, 2020, the total population in Orange County was 3,010,232. The jurisdictional boundaries of Orange County encompass a metropolitan area of 794 square miles, including 34 cities, and 17 state highway routes. The county has 1,059 lane miles of general purpose lanes and 226 lane miles of High-Occupancy Vehicle (HOV) lanes, which is one of California's largest HOV lane networks. Orange County is the third most populous county in California, the sixth-most populous in the United States, and more populous than twenty-one U.S. states. Its county seat is Santa Ana. It is the second most densely populated county in the state.

The Mobility Performance quarterly analysis compares information from the most recent quarter and the previous 4 quarters, involving the following performance measures:

- Vehicle Miles of Travel (VMT)
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (LLM)
- Detector Health

This information is based on data collected every day of the quarter, twenty-four hours a day, by automated vehicle detector stations deployed on urban-area freeways where congestion is regularly experienced. The Mobility Performance Report uses congestion at two speed thresholds: delay from vehicles traveling below 35 MPH and delay from vehicles traveling

below 60 MPH. The 35 MPH limit represents severe congestion while the 60 MPH limit represents light and heavy congestion. These thresholds/limits are set by Caltrans and are based upon engineering experience and District input.

FINDINGS

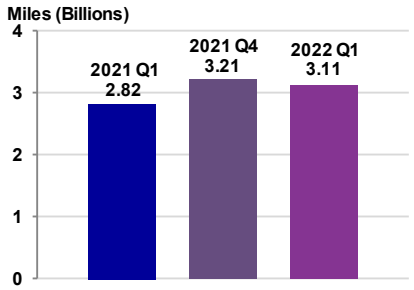
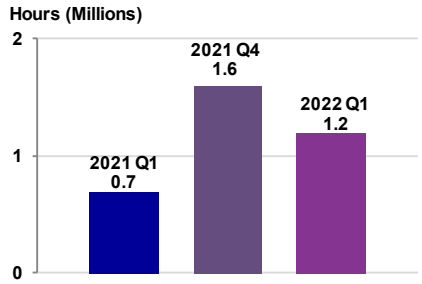
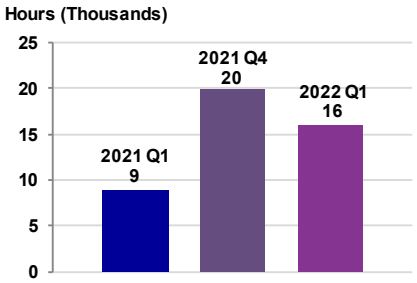
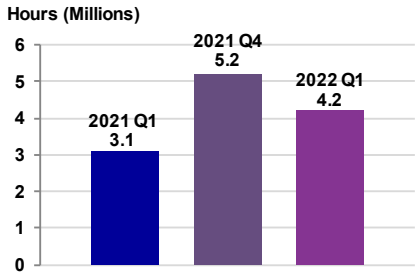
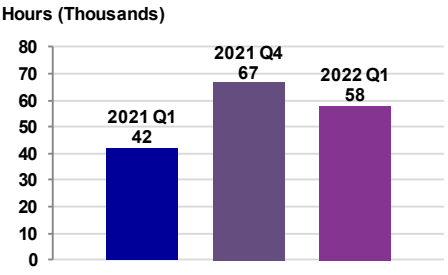
In the 1st quarter of 2022, total delay equaled to 1.2 million vehicle hours of delay (VHD) at the 35 MPH speed threshold and 4.2 million VHD at 60 MPH threshold. Compared to the previous quarter, there was a 26.5 percent decrease in 35 MPH VHD and 19.0 percent decrease in 60 MPH VHD.

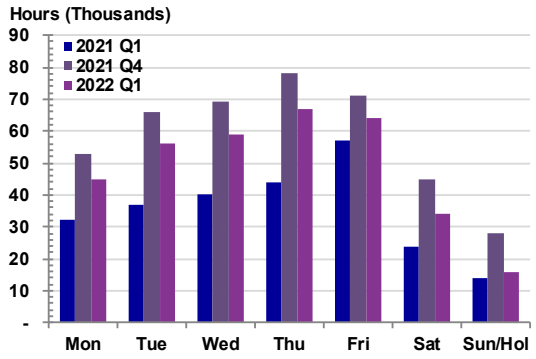
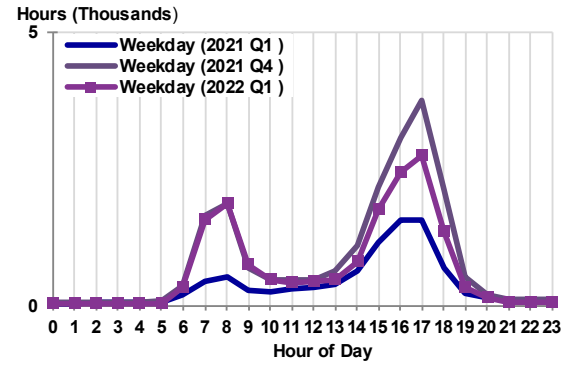
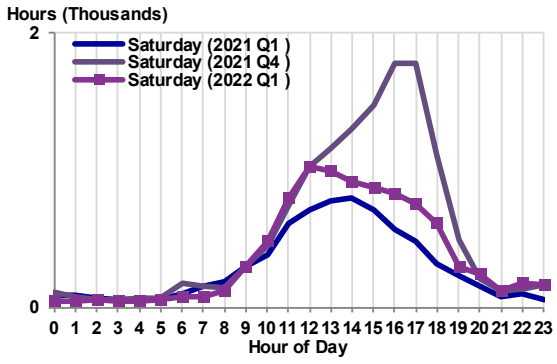
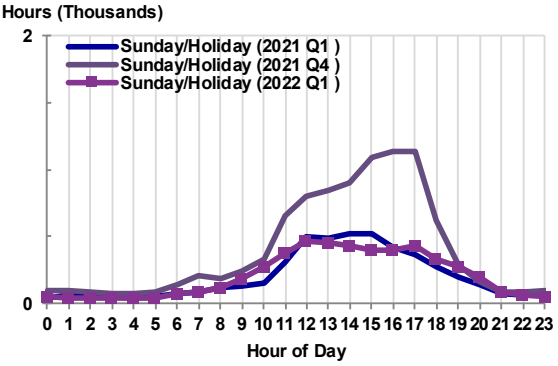
The average weekday VHD experienced in this quarter was approximately 16 thousand VHD at 35 MPH and 58 thousand VHD at 60 MPH. Compared to the previous quarter, there was 20.8 percent decrease in 35 MPH VHD and 12.9 percent decrease in 60 mph VHD.

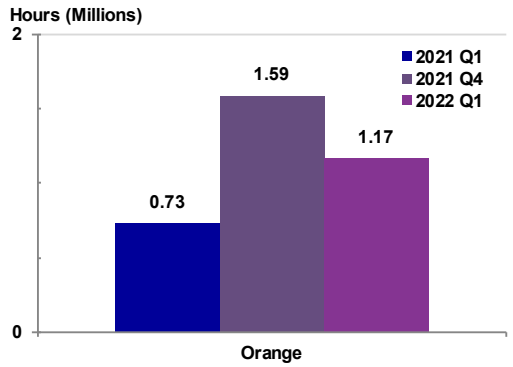
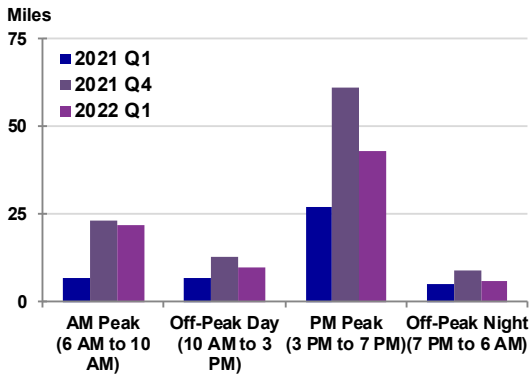
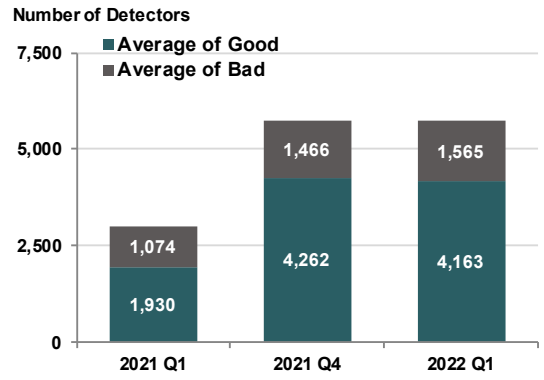
Top 10 Bottlenecks for the 1st Quarter of 2022

Co	Shift	Fwy	Dir	Name	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
Ora	PM	I405	N	BROOKHUR1	13.51	13.74	33.70	-117.95	59	3.06	84,464.3	9,965
Ora	AM	I405	S	BROOKHURST2	13.58	13.81	33.71	-117.95	58	4.10	62,156.1	7,830
Ora	PM	I5	N	TUSTIN RANCH	100.35	28.1	33.72	-117.80	52	3.51	30,353.3	10,905
Ora	PM	SR91	E	W OF SCALES	31.72	R13.349	33.87	-117.76	46	3.58	26,636.0	7,485
Ora	AM	I5	S	MAIN 1	105.19	33	33.77	-117.87	61	0.62	24,357.4	9,625
Ora	PM	SR91	E	LAKEVIEW1	28.45	R10.08	33.85	-117.81	53	2.76	23,825.7	8,445
Ora	PM	I405	N	LOCATION 5013 NB	12.89	13.122	33.70	-117.94	52	1.82	21,517.9	2,705
Ora	PM	SR55	N	TAFT	15.78	15.8	33.82	-117.83	46	2.97	20,016.5	8,490
Ora	AM	SR57	S	NUTWOOD	6.76	17.41	33.88	-117.88	56	2.05	18,289.4	7,615
Ora	PM	I5	S	RED ROBIN	91.53	19.33	33.62	-117.71	62	0.72	17,443.4	12,290

2022 Q1 Quarterly Mobility Statistics

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		10.2%	-3.1%
Total Vehicle Hours of Delay (VHD) at 35 mph		60.9%	-26.5%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		73.6%	-20.8%
Total Vehicle Hours of Delay (VHD) at 60 mph		38%	-19%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		38.7%	-12.9%

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago –	Largest Magnitude Decrease over last quarter Saturday -26%
		Largest Magnitude Increase over one year ago Thursday 53.6%	Largest Magnitude Increase over last quarter –
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 10 PM -34.2%	Largest Magnitude Weekday Decrease over last quarter 5 PM -27%
		Largest Magnitude Weekday Increase over one year ago 8 AM 261%	Largest Magnitude Weekday Increase over last quarter 9 AM 4.7%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 8 AM -37.9%	Largest Magnitude Saturday Decrease over last quarter 5 PM -57.8%
		Largest Magnitude Saturday Increase over one year ago 12 PM 44.5%	Largest Magnitude Saturday Increase over last quarter 10 PM 40.5%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 3 PM -23.6%	Largest Magnitude Sun./Holiday Decrease over last quarter 4 PM -64.2%
		Largest Magnitude Sun./Holiday Increase over one year ago 10 AM 89.6%	Largest Magnitude Sun./Holiday Increase over last quarter 8 PM 24.6%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago –	Largest Magnitude Decrease over last quarter Orange -26.5%
		Largest Magnitude Increase over one year ago Orange 60.9%	Largest Magnitude Increase over last quarter –
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago –	Largest Magnitude Decrease over last quarter PM Peak -29.8%
		Largest Magnitude Increase over one year ago PM Peak 59.9%	Largest Magnitude Increase over last quarter
Average Number of Good and Bad Detectors		Change in Good over one year ago 116%	Change in Good over last quarter -2%
		Change in Bad over one year ago 46%	Change in Bad over last quarter 7%

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2022 Q1-2021 Q1		Difference 2022 Q1-2021 Q4		Rank		
Route	County	2021 Q1	2021 Q4	2022 Q1	Absolute	Percentage	Absolute	Percentage	2021 Q1	2021 Q4	2022 Q1
I5	Orange	229,130	527,388	384,020	154,890	67.6%	-143,368	-27.2%	1	1	1
SR91	Orange	219,653	313,466	217,771	-1,882	-0.9%	-95,694	-30.5%	2	2	2
I405	Orange	98,267	273,842	202,954	104,687	106.5%	-70,889	-25.9%	3	3	3
SR55	Orange	38,849	152,379	128,411	89,562	230.5%	-23,968	-15.7%	5	4	4
SR57	Orange	71,223	150,920	111,983	40,761	57.2%	-38,937	-25.8%	4	5	5
SR22	Orange	33,698	97,765	87,896	54,197	160.8%	-9,869	-10.1%	6	6	6
SR73	Orange	20,302	32,775	14,763	-5,539	-27.3%	-18,012	-55.0%	7	7	7
SR241	Orange	7,213	26,683	14,040	6,827	94.7%	-12,643	-47.4%	8	8	8
I605	Orange	3,057	6,723	3,753	696	22.8%	-2,969	-44.2%	9	9	9
SR142	Orange	989	861	1,063	75	7.6%	202	23.5%	11	12	10
SR133	Orange	3,031	4,239	795	-2,236	-73.8%	-3,444	-81.2%	10	10	11
SR74	Orange	629	2,124	457	-172	-27.3%	-1,667	-78.5%	12	11	12
SR261	Orange	63	732	51	-12	-19.0%	-681	-93.0%	13	13	13
SR1	Orange	3	0	0	-3	-100.0%	0		14		
TOTALS		**726,106**	**1,589,897**	**1,167,957**	**441,852**	**60.9%**	**-421,940**	**-26.5%**			

District 12
Mobility Performance Report

2023 1st Quarter

DEPARTMENT OF TRANSPORTATION

April 29, 2023

District 12 Traffic Operations Northwest

EXECUTIVE SUMMARY

Overview

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The Mobility Performance quarterly analysis compares information from the most recent quarter and the previous 4 quarters, involving the following performance measures:

- Vehicle Miles of Travel (VMT)
- Vehicle Hours of Delay (VHD)
- Lost Lane Miles (LLM)
- Detector Health

This information is based on data collected every day of the quarter, twenty-four hours a day, by automated vehicle detector stations deployed on urban-area freeways where congestion is regularly experienced. The Mobility Performance Report uses congestion at two speed thresholds: delay from vehicles traveling below 35 MPH and delay from vehicles traveling

below 60 MPH. The 35 MPH limit represents severe congestion while the 60 MPH limit represents light and heavy congestion. These thresholds/limits are set by Caltrans and are based upon engineering experience and District input.

FINDINGS

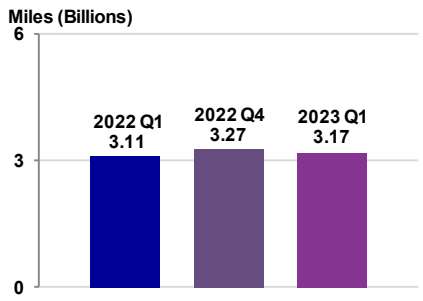
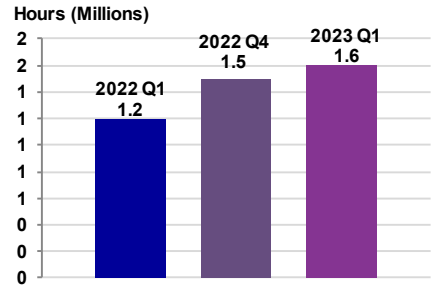
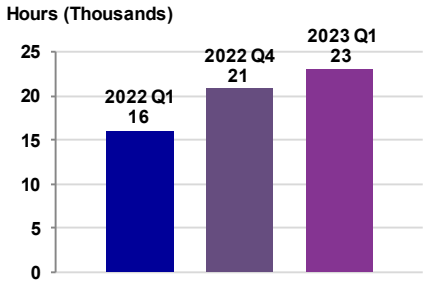
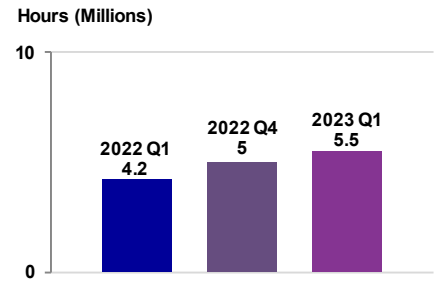
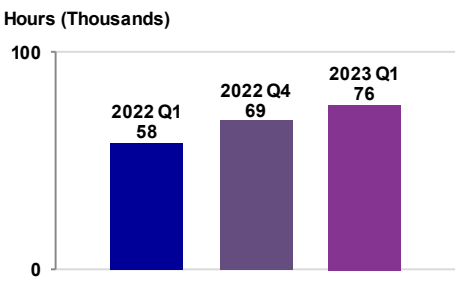
In the 1st quarter of 2023, total delay equaled to 1.6 million vehicle hours of delay (VHD) at the 35 MPH speed threshold and 5.5 million VHD at 60 MPH threshold. Compared to the previous quarter, there was a 6.4 percent increase in 35 MPH VHD and 10.2 percent increase in 60 MPH VHD.

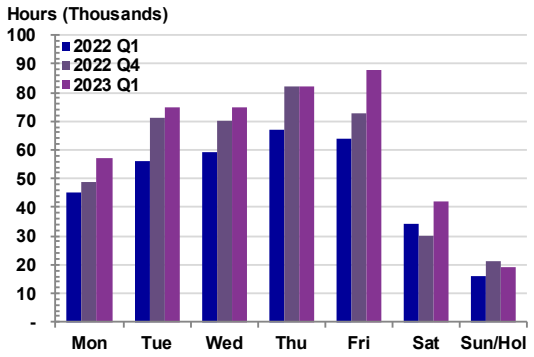
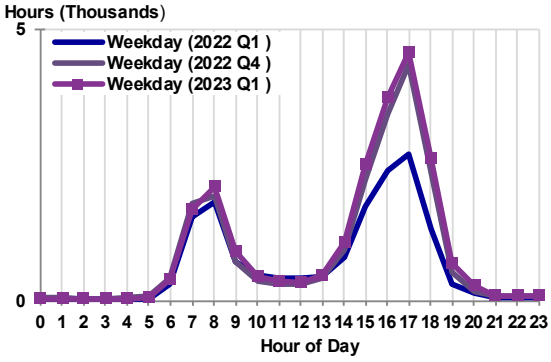
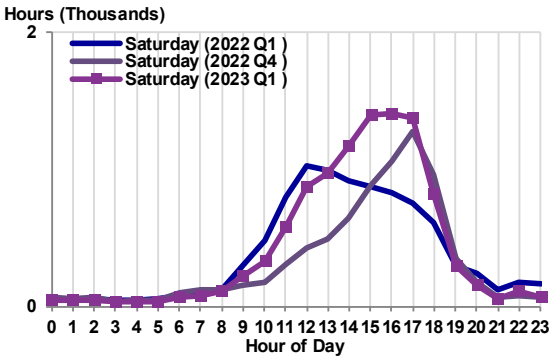
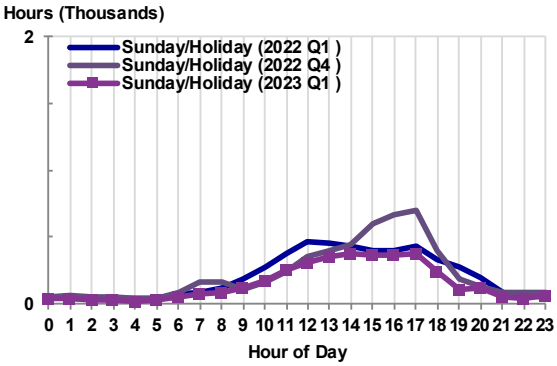
The average weekday VHD experienced in this quarter was approximately 23 thousand VHD at 35 MPH and 76 thousand VHD at 60 MPH. Compared to the previous quarter, there was 8.4 percent increase in 35 MPH VHD and 10.7 percent increase in 60 mph VHD.

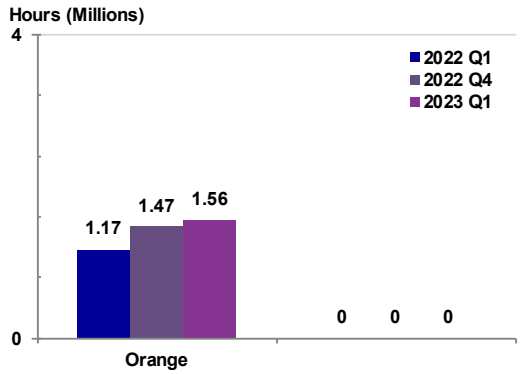
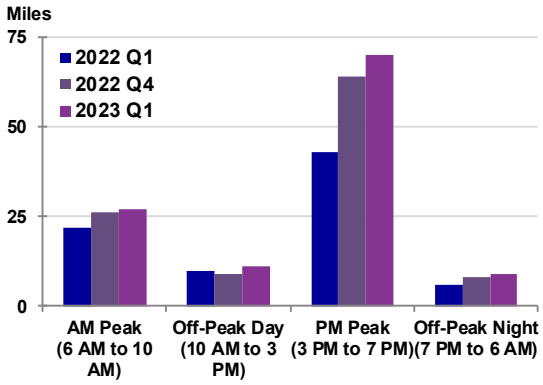
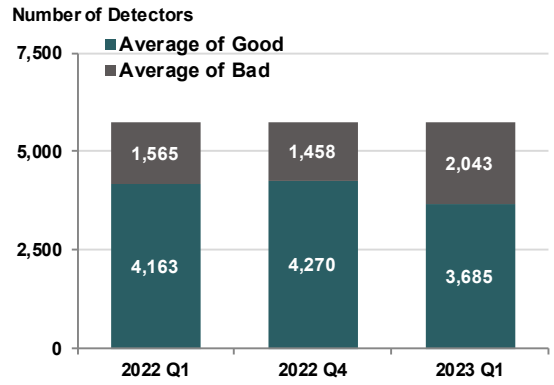
Top 10 Bottlenecks for the 1st Quarter of 2023

Co	Shift	Fwy	Name	Abs PM	CA PM	Latitude	Longitude	# Days Active	Avg Extent (Miles)	Total Delay (veh-hrs)	Total Duration (mins)
Ora	PM	I405-N	TMS 2417 NB	20.809	21.039	33.77	-118.05	64	3.89	107,107.50	13,290.00
Ora	PM	I405-N	LOCATION 5013 NB	12.892	13.122	33.70	-117.94	61	2.54	77,976.70	8,950.00
Ora	PM	SR57-N	TONNER	11.266	22.000	33.94	-117.88	64	1.47	61,987.50	15,045.00
Ora	PM	I5-N	1ST	103.051	30.800	33.74	-117.84	65	0.51	44,774.20	17,225.00
Ora	PM	SR91-E	LAKEVIEW1	28.453	R10.080	33.85	-117.81	54	3.09	38,792.70	11,130.00
Ora	AM	I405-S	BROOKHURST2	13.580	13.810	33.71	-117.95	52	4.68	34,844.30	5,605.00
Ora	PM	SR55-N	TAFT	15.782	15.800	33.82	-117.83	55	2.98	31,987.20	10,525.00
Ora	AM	I5-S	MAIN 1	105.188	33.000	33.77	-117.87	61	0.64	26,083.60	10,090.00
Ora	PM	I5-N	RED HILL	101.491	29.240	33.73	-117.82	56	1.92	20,129.40	6,210.00
Ora	PM	SR91-E	West OF GYPSUM	34.143	R15.793	33.87	-117.72	55	2.13	19,088.90	9,805.00

2023 Q1 Quarterly Mobility Statistics

Measure	Graph	Percentage Change	
		Over one year ago	Over last quarter
Vehicle Miles of Travel (VMT)		1.8%	-3.1%
Total Vehicle Hours of Delay (VHD) at 35 mph		33.9%	6.4%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 35 mph		41.4%	8.4%
Total Vehicle Hours of Delay (VHD) at 60 mph		28.8%	10.2%
Average Non-Holiday Weekday Vehicle Hours of Delay (VHD) at 60 mph		30.2%	10.7%

Measure	Graph	Percentage Change	
Average Vehicle Hours of Delay by Day of Week at 60 mph		Largest Magnitude Decrease over one year ago –	Largest Magnitude Decrease over last quarter Sun/Hol -6.6%
		Largest Magnitude Increase over one year ago Friday 36.4%	Largest Magnitude Increase over last quarter Friday 20.3%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Weekdays		Largest Magnitude Weekday Decrease over one year ago 12 PM -20.4%	Largest Magnitude Weekday Decrease over last quarter 7 AM -6.2%
		Largest Magnitude Weekday Increase over one year ago 5 PM 70%	Largest Magnitude Weekday Increase over last quarter 4 PM 8.8%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Saturdays		Largest Magnitude Saturday Decrease over one year ago 11 AM -26.7%	Largest Magnitude Saturday Decrease over last quarter 6 PM -14.5%
		Largest Magnitude Saturday Increase over one year ago 5 PM 82.2%	Largest Magnitude Saturday Increase over last quarter 2 PM 82%
Average Vehicle Hours of Delay by Hour of Day at 35 mph, Sundays/ Holidays		Largest Magnitude Sun./Holiday Decrease over one year ago 7 PM -57.5%	Largest Magnitude Sun./Holiday Decrease over last quarter 5 PM -44.7%
		Largest Magnitude Sun./Holiday Increase over one year ago 11 PM 0.8%	Largest Magnitude Sun./Holiday Increase over last quarter 9 AM 11.9%

Measure	Graph	Percentage Change	
Total Vehicle Hours of Delay (VHD) by County at 35 mph		Largest Magnitude Decrease over one year ago –	Largest Magnitude Decrease over last quarter –
		Largest Magnitude Increase over one year ago Orange 33.9% ↑	Largest Magnitude Increase over last quarter Orange 6.4% ↑
Average Non-Holiday Weekday Equivalent Lost Lane Mile Hours at 35 mph		Largest Magnitude Decrease over one year ago –	Largest Magnitude Decrease over last quarter –
		Largest Magnitude Increase over one year ago PM Peak 62.3% ↑	Largest Magnitude Increase over last quarter PM Peak 8.6% ↑
Average Number of Good and Bad Detectors		Change in Good over one year ago -11% ↓	Change in Good over last quarter -14% ↓
		Change in Bad over one year ago 31% ↑	Change in Bad over last quarter 40% ↑

Congestion by Route											
		Vehicle Hours of Delay at 35 mph			Difference 2022 Q4-2021 Q4		Difference 2022 Q4-2022 Q3		Rank		
Route	County	2021 Q4	2022 Q3	2022 Q4	Absolute	Percentage	Absolute	Percentage	2021 Q4	2022 Q3	2022 Q4
I5	Orange	527,388	346,018	400,152	-127,236	-24.1%	54,134	15.6%	1	1	1
SR91	Orange	313,466	335,081	323,632	10,167	3.2%	-11,449	-3.4%	2	2	2
I405	Orange	273,842	238,732	259,005	-14,838	-5.4%	20,273	8.5%	3	3	3
SR57	Orange	150,920	177,928	204,941	54,021	35.8%	27,013	15.2%	5	5	4
SR55	Orange	152,379	204,207	183,047	30,668	20.1%	-21,160	-10.4%	4	4	5
SR22	Orange	97,765	46,605	56,903	-40,862	-41.8%	10,298	22.1%	6	6	6
SR241	Orange	26,683	13,629	21,649	-5,034	-18.9%	8,020	58.8%	8	7	7
SR73	Orange	32,775	11,176	13,752	-19,023	-58.0%	2,577	23.1%	7	8	8
I605	Orange	6,723	3,645	5,605	-1,118	-16.6%	1,960	53.8%	9	9	9
SR133	Orange	4,239	3,604	1,473	-2,766	-65.2%	-2,131	-59.1%	10	10	10
SR261	Orange	732	162	115	-617	-84.3%	-47	-29.0%	13	11	11
SR74	Orange	2,124	5	5	-2,119	-99.8%	0	0.0%	11	13	12
SR142	Orange	861	64	3	-859	-99.7%	-61	-95.9%	12	12	13
SR1	Orange	0	0	0	0		0				
TOTALS		**1,589,897**	**1,380,853**	**1,470,281**	**-119,616**	**-7.5%**	**89,428**	**6.5%**			

Appendix B-1: Meeting CMP Traffic Impact Analysis Requirements

Meeting CMP Traffic Impact Analysis Requirements

AN OPTIONAL GUIDANCE FOR LOCAL JURISDICTIONS

Prepared for:

Orange County Environmental Management Agency
Orange County Transportation Commission
Orange County Transit District
League of Cities, Orange County Division
Transportation Corridor Agencies

Prepared by:

Kimley-Horn and Associates, Inc.
and
The Planning Center

June 11, 1991

CMP-TIA REQUIREMENTS

Requirements of CMP legislation

- Analyze impacts of land-use decisions on CMP Highway System.
- Estimate costs associated with mitigation of impacts on CMP Highway System.
- Exclude costs associated with mitigating the impacts of interregional travel.
- Allow credits against mitigation costs for local public and private contributions to improvements to the CMP Highway System.
  - For toll road facilities, allow credits only for local public and private contributions which will not be reimbursed from toll revenues or other state or federal sources.
- Report annually on actions taken to adopt and implement a program to analyze the impacts of land-use decisions on the CMP Highway System and to estimate the costs of mitigating those impacts.

Year One Goal

- Identify the impacts of development anticipated to occur over the next 7 years on the CMP Highway System and the projected costs of mitigating those impacts.

Actions Required of Local Jurisdictions

- A TIA will be required for CMP purposes for all proposed developments generating 2,400 or more daily trips. For developments which will directly access the CMP Highway System, the threshold for requiring a TIA should be reduced to 1,600 or more trips per day.
- Document procedures used to identify and analyze traffic impacts of new development on CMP Highway System. This documentation should include the following:
  - Identification of type of development proposals which are subject to a traffic impact analyses (TIA);
  - Description of required or acceptable TIA methodology; and
  - Description of inter-jurisdictional coordination process used when impacts cross local agency boundaries.
- Document procedures/standards used to determine the costs of mitigation requirements for impacts of new development on CMP Highway System.
- Document methodology and procedures for determining applicable credits against mitigation costs including allowable credits associated with contributions to toll road facilities.

SECTION 1 – INTRODUCTION

Purpose

State legislation creating the CMP requires that the program contain a process to analyze the impacts of land-use decisions by local governments on the regional transportation system. Once impacts of a land-use decision are identified, the CMP also requires that the costs to mitigate the impacts be determined.

For CMP purposes, the regional transportation system is defined by the legislation as all state highways and principal arterials at a minimum. This system is referred to as the CMP Highway System. The identification and analysis of impacts along with estimated mitigation costs are determined with respect to this CMP Highway System.

The objectives of this report are to:

- Provide guidance to local agencies in conducting traffic impact analyses.
- Assist local agencies in maintaining eligibility for funds through documentation of CMP compliance.
- Make available minimum standards for jurisdictions wishing to use them for identifying and analyzing impacts on CMP Highway System.
- Establish CMP documentation requirements for those jurisdictions which elect to use their own TIA methodology.
- Establish a baseline from which TIA standardization may evolve as experience is gained in the CMP process.
- Cause the analysis of impacts on the CMP Highway System to be integrated into the local agency development review process.
- Provide a method for determining the costs associated with mitigating development impacts.
- Provide a framework for facilitating coordination between agencies when appropriate.

Background

Through a coordinated effort among local jurisdictions, public agencies, business and community groups, Orange County has developed a CMP framework in response to the requirements of Assembly Bill 1791. This framework is contained in the CMP Preparation Manual which was issued in January 1991 as a joint publication of the following agencies:

- County of Orange
- Orange County Division, League of California Cities
- Orange County Transportation Commission
- Orange County Transit District
- Transportation Corridor Agencies

The CMP Manual describes the CMP Program requirements for each component

prescribed by the CMP provision of AB 1791. The components include one entitled Land-Use Coordination, which sets forth the basic requirements for the assessment, mitigation, and monitoring of traffic impacts to the CMP Highway System which are attributable to development projects.

Consolidation of Remaining Issues

This report is intended to present a useful reference in addressing the remaining issues associated with the identification and treatment of development impacts on the CMP Highway System. It is desirable that a standardized approach be utilized for determining which projects require analysis and in carrying out the resulting traffic impact analysis (TIA). It is also desirable that a reasonably uniform approach be utilized in determining appropriate mitigation strategies and estimating the associated costs.

TIA Survey History

In 1989, Kimley-Horn and Associates, Inc. conducted a survey of TIA procedures being used at the time by local jurisdictions within Orange County. The survey revealed that although there were some commonalities, there was considerable variation in approach, scope, evaluation methodology, and project disposition.

As part of the CMP process, it was determined that the identification of TIA elements which can or should be standardized should be accomplished. Additional documentation of cost estimating practices and the development of standardized costs and estimating procedures will be valuable in achieving desired consistency among jurisdictions.

In order to accomplish these objectives, Kimley-Horn's previous TIA survey was updated and additional information was solicited from each local agency within Orange County. The information was obtained through telephone interviews with City Engineers and Planners after they had an opportunity to examine the survey questionnaire which was mailed to them in advance of the interview. The information obtained was used in preparing the methodology recommendations contained in this report. A summary of the update survey results is provided in the Appendix.

Relationships with Other Components

In addition to being an integral part of the Land-Use Coordination component of the CMP, the traffic impact analysis requirements also relate to all other CMP components to a greater or lesser degree. These components include the following:

- Modeling
- Level of Service
- Transit Standards
- Traffic Demand Management
- Deficiency Plans
- Capital Improvement Program

The Land-Use Coordination section in Chapter 3 of the CMP Preparation Manual dated January, 1991 contains a detailed description of each of the component linkages listed above.

SECTION 2- REQUIREMENTS OF CMP LEGISLATION

The complete text of CMP legislation is contained in Appendix A to the Preparation Manual for the CMP for Orange County dated January, 1991. For ease of reference, the requirements of this legislation related to analysis of the impacts of land-use decisions made by local jurisdictions are summarized as follows:

- Analyze impacts of land-use decisions on CMP Highway System.
- Estimate costs associated with mitigation of impacts on CMP Highway System.
- Exclude costs associated with mitigating the impacts of interregional travel.
- Allow credits against mitigation costs for local public and private contributions to improvements to the CMP Highway System.
    - For toll road facilities, allow credits only for local public and private contributions which will not be reimbursed from toll revenues or other state or federal sources.
- Report annually on actions taken to adopt and implement a program to analyze the impacts of land-use decisions on the CMP Highway System and to estimate the costs of mitigating those impacts.

SECTION 3 - ACTIONS REQUIRED OF LOCAL AGENCIES

The provisions of CMP legislation, as summarized in the preceding section, impose a requirement on local jurisdictions to carry out certain actions in order to demonstrate their compliance with the CMP program. This compliance will maintain eligibility to receive state gas tax funds made available by the voter approved Proposition 111. The actions and documentation requirements related to the identification and analysis of traffic impacts include the following:

- A TIA will be required for CMP purposes for all proposed developments generating 2,400 or more daily trips. For developments which will directly access the CMP Highway System, the threshold for requiring a TIA should be reduced to 1,600 or more trips per day.
- Document procedures used to identify and analyze traffic impacts of new development on CMP Highway System. This documentation should include the following:
    - Identification of type of development proposals which are subject to a traffic impact analyses (TIA);
    - Description of required or acceptable TIA methodology; and
    - Description of inter-jurisdictional coordination process used when impacts

cross local agency boundaries.

- Document procedures/standards used to determine the costs of mitigation requirements for impacts of new development on CMP Highway System.
- Document methodology and procedures for determining applicable credits against mitigation costs including allowable credits associated with contributions to toll road facilities.
- Establish annual monitoring and reporting process to summarize activities performed in analyzing the impacts of land-use decisions on the CMP Highway System and in estimating the associated mitigation costs. Procedures for incorporating mitigation measures into the Capital Improvement Program should also-be established.
- For the first year, local jurisdictions may assume that all interregional travel occurs on the freeway system or they may develop an analysis methodology to determine the amount of interregional travel occurring on arterials which are part of the CMP Highway System. During the first year, TIAs need to analyze only the impacts to arterial portions of the CMP Highway System.

SECTION 4 - CMP TRAFFIC IMPACT ANALYSIS METHODOLOGY

In order to assure that the CMP Program meets its objectives of linking land-use decisions with the adequate evaluation of impacts related to those decisions, traffic impact analyses must often be undertaken. There are a number of essential elements which should be included in traffic impact analyses (TIA) used to support the program. Many local jurisdictions already employ development review processes which will be adequate for addressing CMP requirements. For those jurisdictions wishing technical guidance in carrying out the analysis of traffic impacts on the CMP Highway System, this section offers an appropriate TIA methodology.

PROJECTS REQUIRING TIA ANALYSIS

All development in Orange County will use the CMP Network to a greater or lesser extent from time-to-time. The seven-year capital improvement program, together with deficiency plans to respond to deficiencies which cannot be resolved in the 7-year timeframe, are developed in response to anticipated growth in travel within a jurisdiction. Thus, a certain level of travel growth is addressed in the normal planning process and it is not necessary to evaluate relatively small projects with a TIA or to rely on TIA's as the primary means of identifying needed CMP Highway System improvements. Furthermore, County voters have approved a sales tax increase which will fund major improvements to the transit and highway systems serving the County.

Many jurisdictions will require an EIR for a proposed development project. When required, the EIR should include steps necessary to incorporate the required CMP analysis. Most or all of the TIA elements described in this section would normally be incorporated into the typical EIR traffic analysis.

Certain development projects not requiring an EIR should still be evaluated through a TIA process due to their land-use type, intensity, proximity to the CMP network, and/or duration of development timeframe. In other words, developments which will significantly alter the anticipated demand on a CMP roadway should be evaluated through a TIA approach.

At the present time, there is a wide-ranging approach to determining which projects will require a TIA. In some jurisdictions, there are formal guidelines, while in others it depends primarily on the judgment of a member of staff relative to the probable significance of the project's impact on the surrounding road system.

The OCTC TIA guidelines recommended defining three percent of the level of service standard as significant impact. This seems reasonable for application for CMP purposes. Thus, project impacts of three percent or less can be mitigated by impact fees or other revenues. Projects with a potential to create an impact of more than three percent of Level of Service E capacity will require TIA's. On this basis, it is recommended that all development projects which generate more than 2,400 daily trips be subject to a TIA for CMP evaluation. For projects which will directly access or be in close proximity to a CMP Highway System link a reduced threshold of 1,600 trips/day would be appropriate. Appendix B provides background information of the derivation of these threshold values.

TIA PROCESS

There are a number of essential elements in the TIA process itself. It is desirable that all of these elements be evaluated within an acceptable range of criteria in order to assure the objectives of the CMP process and to maintain a reasonable degree of equity from jurisdiction to jurisdiction. It is recognized, however, that for certain of the elements, some variations relating to professional judgment and local criteria and characteristics are necessary and appropriate to the process. These factors have been fully considered in developing the descriptions of the following elements:

- Evaluation of existing conditions
- Trip generation
- Internal capture and passer-by traffic
- Trip distribution and assignment
- Radius of development influence
- Background traffic
- Capacity analysis methodology
- Impact costs/mitigation

Evaluation of Existing Conditions

In order to evaluate the relative impacts of a proposed development, determine CMP Highway System status and define appropriate mitigation for new impacts, it is necessary to understand the existing conditions on the affected roadway network. Evaluation of existing conditions is common to nearly all jurisdictions in Orange County. Given that most

jurisdictions use link and intersection capacity analysis techniques compatible with the techniques identified in the level-of-service component, no changes in existing local jurisdiction procedures should be necessary in connection with the CMP Program.

Trip Generation

At the foundation of traffic impact analyses is the quantification of trip generation. Use of the ITE Trip Generation Manual is common throughout Orange County. In addition, other widely accepted practices are being used when appropriate to supplement the lit data. These practices include use of acceptable rates published by local agencies and surveys conducted at similar sites, subject to approval of the reviewing agency. Given the uniformity of practice in Orange County to date, no major adjustments in this procedure should be required. It would be desirable however to establish a central library for reporting the results of special trip generation studies and making these results available to all other jurisdictions who wish them.

Internal Capture and Passer-by Traffic

Techniques for identifying the internal relationship of travel within mixed-use developments and the degree to which development captures passer-by trips as opposed to creating new trips are being applied by approximately 2/3 of the local jurisdictions within Orange County. The use of guidelines in the ITE Trip Generation Manual and appropriate professional judgment are the predominant techniques employed. To supplement the guidance available through ITE documentation, local jurisdictions are encouraged to undertake additional studies to document rates applicable within their jurisdiction. The determination of applicable rates should be undertaken by experienced transportation engineering professionals with thorough documentation of the methodology, data, and assumptions used. It is recommended that those jurisdictions which do not currently allow these adjustments establish revised TIA procedures incorporating this element. As with trip generation data, a central library would be desirable for reporting of data and analyses performed locally related to determination of appropriate factors.

Trip Distribution and Assignment

Several appropriate distribution and assignment techniques are used in Orange County, depending on the size of the development and the duration of buildout. Manual and computer modeling approaches are used as appropriate. Manual methods based on the best socio-economic information available to the agency and applicant should be acceptable except when a development's size makes a modeling approach more appropriate. Sources of this information include demographic surveys, market analyses, and previous studies.

Radius of Development Influence

There are numerous ways to identify the study area to be evaluated in a TIA. These include both qualitative and quantitative approaches. One of the most effective ways is through the determination of the quantity of project traffic on CMP roadway links compared to a selected level of impact. The goal of a quantitative approach is to be sure that all elements of the CMP network are addressed in a comparable manner from jurisdiction to

jurisdiction. This is important due to the potential for overlapping impacts among jurisdictions. It is also important to maintain flexibility within a quantitative process to allow transportation professionals at local jurisdictions to add areas to the study which are of specific concern. It is not intended that CMP practices should restrict this aspect of each agency's existing TIA process.

It is recommended that the study area for CMP Highway System links be defined by a measure of significant impact on the roadway links. As a starting point, it is proposed that the measure be three percent of existing roadway capacity. Thus, when a traffic impact analysis is being done it would require the inclusion of CMP roadway links that are impacted by 3 percent or more of their LOS E capacity. If a TIA is required only for CMP purposes, the study area would end when traffic falls below three percent of capacity on individual roadway links. If the TIA is also required for other purposes, additional analysis can be required by the local jurisdiction based on engineering judgment or local regulation as applicable.

Background Traffic

In order for a reasonable assessment of the level of service on the CMP network, it is necessary to not only identify the proposed development impact, but also the other traffic which can be expected to occur during the development of the project. There are numerous methods of evaluating background traffic. The implications of these alternative methods are that certain methodologies may result in deficiencies, while other methodologies may find an acceptable operating conditions.

The cost to mitigate impacts of a land-use decision is unrelated to background traffic. Rather, it is related to the cost of replacing the capacity which is consumed by the proposed development. However, it is necessary to understand background traffic in order to evaluate level-of-service. Background traffic is composed of existing traffic demands and growth from new development which will occur over a specific period of time. Both the existing and the growth elements of background traffic contain sub-elements. These include traffic which is generated within Orange County, that which begins and/or ends within the County, and interregional traffic which has neither end in Orange County. CMP legislation stipulates that interregional traffic will not be considered in CMP evaluations with respect to LOS compliance or determining costs of mitigation.

Given that the CMP process is new, there is no existing practice of separating interregional traffic from locally generated traffic. Until a procedure for identifying interregional traffic is developed, local jurisdictions may assume that all interregional traffic occurs on the freeway system. Initially TIA's required for CMP purposes need only analyze the impacts to arterial portions of the CMP Highway System.

Local governments in Orange County are generally consistent in their approach to background traffic. There are three major approaches used. The first is to use historical growth factors which are applied to existing traffic volumes to project future demands. The second is to aggregate the impacts of specific individual projects which have been approved or planned but not built to identify the total approved background traffic on the study area roadway system. A third method is to use computer modeling to identify total traffic demands which represent both background traffic and project impact traffic.

For the present CMP program, it is recommended that the discretion for the appropriate process lie within the local jurisdiction, however, the method to be used in the jurisdiction should be clearly defined in the agency's TIA rules and procedures. In addition, it is recommended that all jurisdictions create a listing of approved development projects and a map showing their locations which would be updated frequently and be available to other jurisdictions on request. The listing should include information related to type and size of land-use and phasing for each project.

It is appropriate to periodically update long range forecasts based on development approvals and anticipated development growth in the region and plan a transportation system which will provide the necessary level-of-service for this amount of development. When a development proposal will significantly alter this long-term plan, it will be necessary to address the aggregate of all approved development to assure that there is a long-term solution. However, from a TIA perspective, it is reasonable and practical to consider only that development traffic which can be expected to exist at the time of buildout of a new development proposal. That is to say, for CMP purposes background traffic should be limited to that traffic which is generated by development which will exist at the time of buildout of a proposed development. CEQA requirements may dictate that other background traffic scenarios be analyzed as well.

Capacity Analysis Methodology

Once the projected traffic demands are known, it is necessary to evaluate these demands relative to available and planned roadway capacity. The methodology used in capacity determination in Orange County is relatively uniform. Additionally, the level of service (LOS) component of the CMP Program has identified specific criteria which are to be used in determining level-of-service on the CMP Highway System.

Impact Costs/Mitigation

This element is at the heart of the CMP process; that is to identify the costs of mitigating a land development decision on the CMP System.

The current practice throughout Orange County is to require mitigation only when the level-of-service standard is exceeded. However, some jurisdictions require regular impact mitigation fees and phasing road improvements with development. The growth management requirement of the sales tax Measure M mandates a traffic phasing program. Often, mitigation is equated to construction of roadway improvements to maintain an acceptable level-of-service and/or to maintain the existing level-of-service. In some instances, a pay and go mitigation approach is allowed. This means that new development may pay its fair share and go forward and the provision of improvements remain the responsibility for the local jurisdiction.

In order to assess responsibility for impacts, there are a variety of approaches. One approach is to consider impact traffic as a percent of total traffic. Impact traffic may also be taken as a percentage of existing capacity. Another common approach is to use the net impact of development as a percent of total future traffic demand.

Since CMP legislation requires the identification of costs of land-use decisions and impacts across jurisdictional lines, it is desirable that the CMP program have a consistent method

for identifying the costs of development impacts. On the other hand, a wide variety of mitigations can occur from jurisdiction to jurisdiction.

It is recommended that the impact costs be calculated as the total of new development traffic on a roadway link requiring improvement divided by the capacity of the improvement times the cost of the improvement. This can be expressed in a formula as follows:

$$\textbf{Impact Cost} = \frac{\text{Development Traffic}}{\text{Capacity of Improvement}} \times \text{Improvement Cost}$$

Improvements to be included in the cost analysis should be those identified in the jurisdiction's adopted Circulation Element and any additional improvements identified in the development TIA. The total impact cost for a development would be the sum of costs for all significantly impacted links. Funds collected from these assessments could be aggregated and applied to specific projects on an annual basis in accordance with locally established priorities. If project impacts extend across jurisdictional boundaries the impact costs calculated for significantly impacted links in an adjacent jurisdiction should be allocated to that jurisdiction for use in its program of prioritized improvements.

Through this process, progress can be achieved in implementing system improvements without having to wait for 100% of the funds being collected for each individual improvement. In theory, all required improvements will be accomplished over time as new developments are approved which will generate traffic to utilize available and planned system capacity. The costs should be based on recent Unit cost experience in Orange County and may include planning, permitting, preliminary engineering, design, right-of-way, construction, landscaping, construction inspection, and, if applicable, financing costs.

There are two approaches to mitigation. One is traffic reduction and the other is to build improvements to accommodate the new traffic. Traffic reduction through transportation demand ordinances or other regulations which will reduce impacts can be calculated in the same way a development impact would be calculated. But in this case, it would be taken as a credit or a reduction in impact. Mitigation techniques such as TDM or phasing or reduction in project intensity merely reduce for a new development the amount of impact which must be mitigated and are changes which should occur prior to the calculation of project impact costs. A monitoring program should be established to confirm that anticipated reductions are realized.

To comply with the CMP process, a local jurisdiction should accomplish two things. First, it should demonstrate that it is analyzing and mitigating the impact of new development on the CMP Highway System. Second, it should maintain the level-of-service standards or adopt a deficiency plan Consistent with CMP legislation. In order to demonstrate the mitigation which has been undertaken, the local jurisdiction should maintain a record of the cumulative impact cost of all development approvals and the cumulative mitigation value of improvements provided by the local jurisdiction. These could be construction programs or credits from a TDM ordinance or other traffic reduction measures. It is then only necessary to show on an annual basis that the total improvement costs plus traffic

reduction credits are equal to or greater than the total impact cost of new development approvals to prove mitigation compliance.

The maintenance of level-of-service would come through implementation of improvements contained in the 7-year capital improvements element, Measure M and state-funded improvements, additional improvements which may be made in conjunction with development approvals, and from deficiency plans which may be required from time to time. From a TIA perspective, it would be necessary to document the following:

a. the level-of-service on the CMP network at buildout of the proposed development will be: 1) level—of-service "E or better, or 2) will not result in a cumulative increase of more than 0.10 in v/c ratio if the established LOS standard is worse than LOS E.

b. a deficiency plan exists to address the links for which level-of-service is not provided, and

c. a deficiency plan will be developed for a new link when a deficiency will occur.

DOCUMENTATION OF RULES AND PROCEDURES

To assure a clear understanding of the TIA procedures which are necessary to support a viable CMP program, it is recommended that a set of rules and procedures be established by each local jurisdiction. Ideally, these rules and procedures would cover the requirements for the full TIA analysis and would include minimum requirements for the CMP process. Local jurisdictions which prefer not to adopt separate CMP TIA standards could implement standards for CMP requirements within a TIA and maintain their existing approach for all other aspects of their existing TIA process. The following is a summary of the elements which should be included in CMP procedures documentation and the methodologies applicable to each element:

1. **Thresholds for Requiring a TIA for CMP** - Projects with the potential to create an impact of more than 3% of LOS "E' capacity on CMP Highway system links should require a TIA. All projects generating 2,400 or more daily trips should require a TM for CMP evaluation. If a project will have direct access to a CMP link this threshold should be reduced to 1,600 or more daily trips. A TIA should not be required again if one has already been performed for the project as part of an earlier development approval which takes the impact on the CMP Highway System into account.

2. **Existing Conditions Evaluation** - Identify current level-of-service on CMP roadways and intersections where the proposed development traffic will contribute to 3 percent of the existing capacity. Use procedures defined in the level-of-service component for evaluation of level—of-service.

3. **Trip Generation** - ITE trip generation rates or studies from other agencies and locally approved studies for specific land-uses.

4. **Internal Capture and Passerby Traffic** - Justification for internal capture should be included in the discussion. Passerby traffic should be calculated based upon ITE

data or approved special studies.

5. **Distribution and Assignment** - Basis for trip distribution should be discussed and should be linked to demographic or market data in the area. Quantitative and/or qualitative information can be used depending on the size of the proposed development. As the size of the project increases, there should be a tendency to use a detailed quantitative approach for trip distribution. Trip assignment should be based on existing and projected travel patterns and the future roadway network and its travel time characteristics.
6. **Radius of Impact/Project Influence** - The analysis should identify the traffic assignment on all CMP roadway links until the impact becomes less than 3 percent of level of service E capacity.
7. **Background Traffic** - Total traffic which is expected to occur at buildout of the proposed development should be identified.
8. **Impact Assessment Period** - This should be the buildout timeframe of the proposed development.
9. **Capacity Analysis Methodology**- The methodology should be consistent with that specified in the level-of—service component of the CMP Program.
10. **Improvement Costs** - The cost of roadway improvements should include all costs of implementation including studies, design, right-of-way, construction, construction inspection, and financing costs, if applicable.
11. **Impact Costs and Mitigation** - The project impact divided by the capacity of a roadway improvement times the cost of the improvement should be identified for each significantly impacted CMP link and summed for the study area.
12. **Projected Level-of-Service** - The TIA should document that the projected level-of-service on all CMP links in the study area will be at Level-of-Service "E" or the existing level-of-service whichever is less, or that a deficiency plan exists or will be developed to address specific links or intersections.

SECTION 5 – APPENDICES

Appendix A – Summary of TIA Update Survey Results (Available Upon Request)

Appendix B – Deviation of Thresholds for Projects Requiring TIA Analysis

APPENDIX B

DERIVATION OF THRESHOLDS FOR PROJECTS REQUIRING TRAFFIC IMPACT ANALYSIS

The TIA process recommendation is to require a TIA for any project generating 2,400 or more daily trips. This number is based on the desire to analyze any impacts which will be 3% or more of the existing capacity. Since most CMP Highway System will be four lanes or more, the capacity used to derive the threshold is a generalized capacity of 40,000 vehicles/day. The calculations are as follows:

40,000 veh./day x 3% = 1,200 veh./day

Assuming 50/50 distribution of project traffic on a CMP link

1,200 x 2 = 2,400 veh./day total generation

As can be seen, a project which will generate 2,400 trips/day will have an expected maximum link impact on the CMP system of 1,200 trips/day based on a reasonably balanced distribution of project traffic. On a peak-hour basis, the 3% level of impact would be 120 peak-hour trips. For intersections, a 3% level of impact applied to the sum of critical volume (1,700 veh./hr.) would be 51 vehicles per hour.

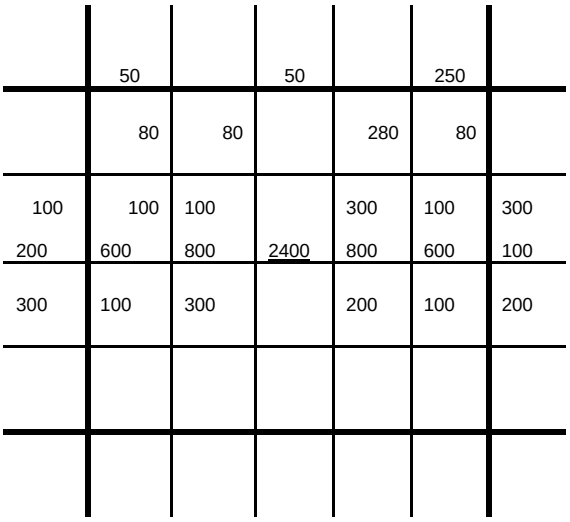
A level of impact below 3% is not recommended because it sets thresholds which are generally too sensitive for the planning and analytical tools available. Minor changes in project assumptions can significantly alter the results of the analysis and the end result can be additional unnecessary cost to the developer and additional review time by staff with little benefit. Additionally, a lower threshold of significance will expand the study area, which also increases effort and costs, and increases the probability that the analysis would extend beyond jurisdictional boundaries.

The following illustration shows that the 2,400 trip/day threshold would be expected to produce a 3% impact on the CMP System only when the project has relatively direct access to a CMP link. As a project location moves further off the CMP System the expected impacts is reduced. With a more directional distribution of project traffic a development with direct CMP System access cold produce a 3% impact with somewhat lower daily trip generation.

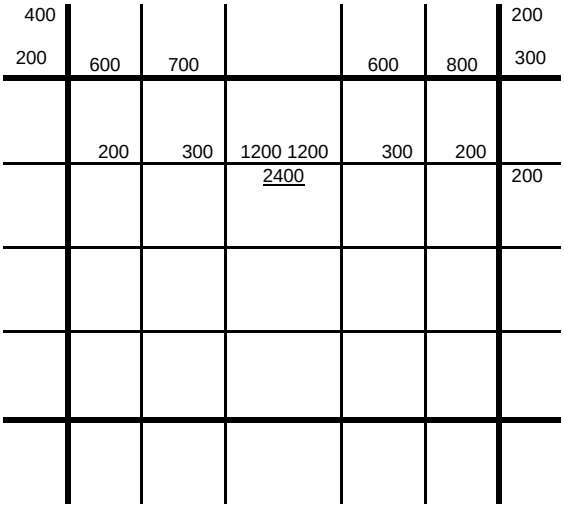
The table included on the following page illustrates the daily trip generation thresholds which would produce various levels of impact on the CMP System for project locations with and without direct access to the system. Based on a 3% impact the trip generation thresholds for requiring a TIA are 1,600 veh./day with direct CMP System access and 2,400 veh./day if a project does not have direct CMP System access.

CMP Highway System Impacts for Development Generating 2,400 trips/day

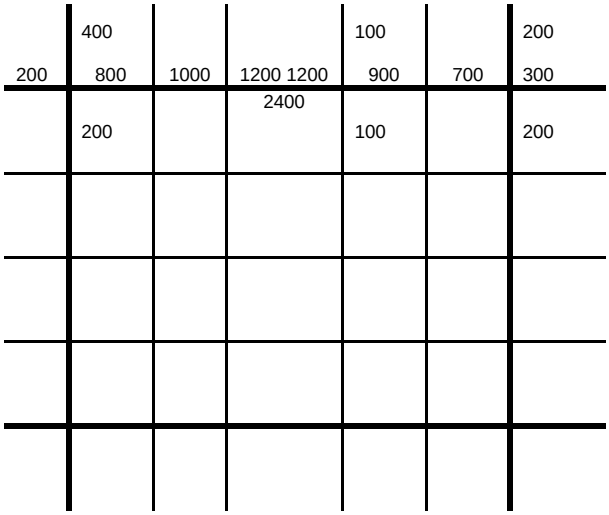
Based on proximity to CMP System



MAXIMUM IMPACT < 1%



MAXIMUM = 1.8%



MAXIMUM = 3%
COULD BE 4.5% WITH 75/25 SPLIT

Alternative Criteria

Assume 75/25 distribution

For direct access to CMP System:
1,200/.75 = 1,600 veh./day

For no direct CMP System Access:
Approximately 1/3 less impact on CMP System
1,600 x 3/2 = 2,400 veh./day

Daily Trip Generation

Significant Impact	Direct Access	No Direct Access
1%	500	800
2%	1,100	1,600
3%	1,600	2,400

Appendix B-2: Traffic Impact Analysis Exempt Projects

Appendix B-2: Traffic Impact Analysis Exempt Projects

Projects exempt from the requirements of a mandatory, CMP Traffic Impact Analysis are listed below. This list is not meant to be all-inclusive. Any inquiries regarding additional exemptions shall be transmitted in writing to the Orange County Transportation Authority, attention CMP Program Manager.

Project Not Requiring a CMP TIA Analysis:

1. Applicants for subsequent development permits (i.e., conditional use permits, subdivision maps, site plans, etc.) for entitlement specified in and granted in a development agreement entered into prior to July 10, 1989.[1]
2. Any development application generating vehicular trips below the Average Daily Trip (ADT) threshold for CMP Traffic Impact Analysis, specifically, any project generating less than 2,400 ADT total, or any project generating less than 1,600 ADT directly onto the CMPHS. [1, 2]
3. Final tract and parcel maps. [1, 2, 3]
4. Issuance of building permits. [1, 2, 3]
5. Issuance of certificates of use and occupancy. [1, 2, 3]
6. Minor modifications to approved developments where the location and intensity of project uses have been approved through previous and separate local government actions prior to January 1, 1992. [1, 2, 3]

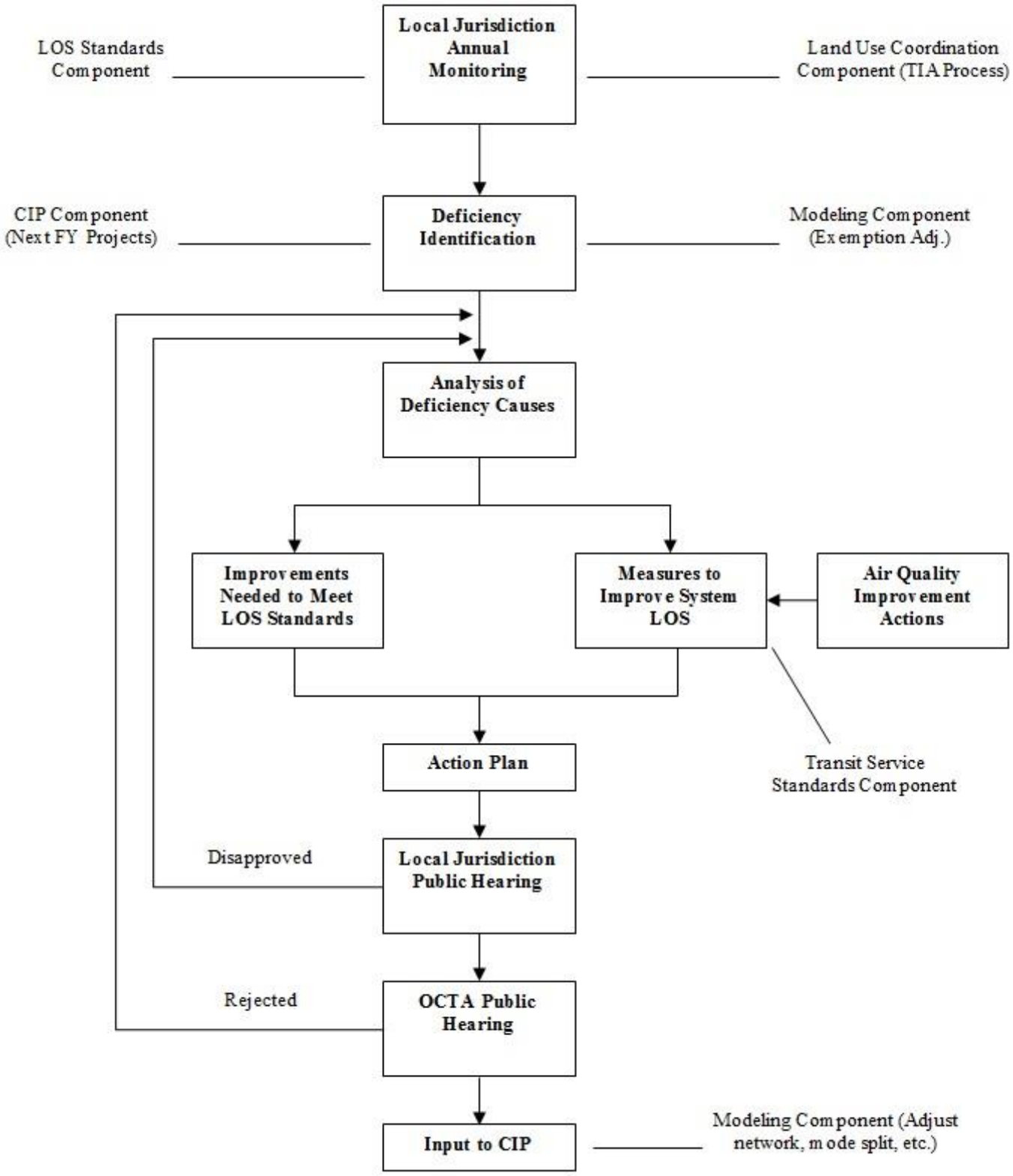
[1] Vehicular trips generated by CMP TIA-exempt development applications shall not be factored out in any traffic analyses or levels of service calculations for the CMPHS.

[2] Exemption from conduction a CMP TIA shall not be considered an exemption from such projects' participation in approved, transportation fee programs established by the local jurisdiction.

[3] A CMP TIA is not required for these projects only in those instances where development approvals granting entitlement for the project sites were granted prior to the effective date of CMP TIA requirements (i.e., January 1992).

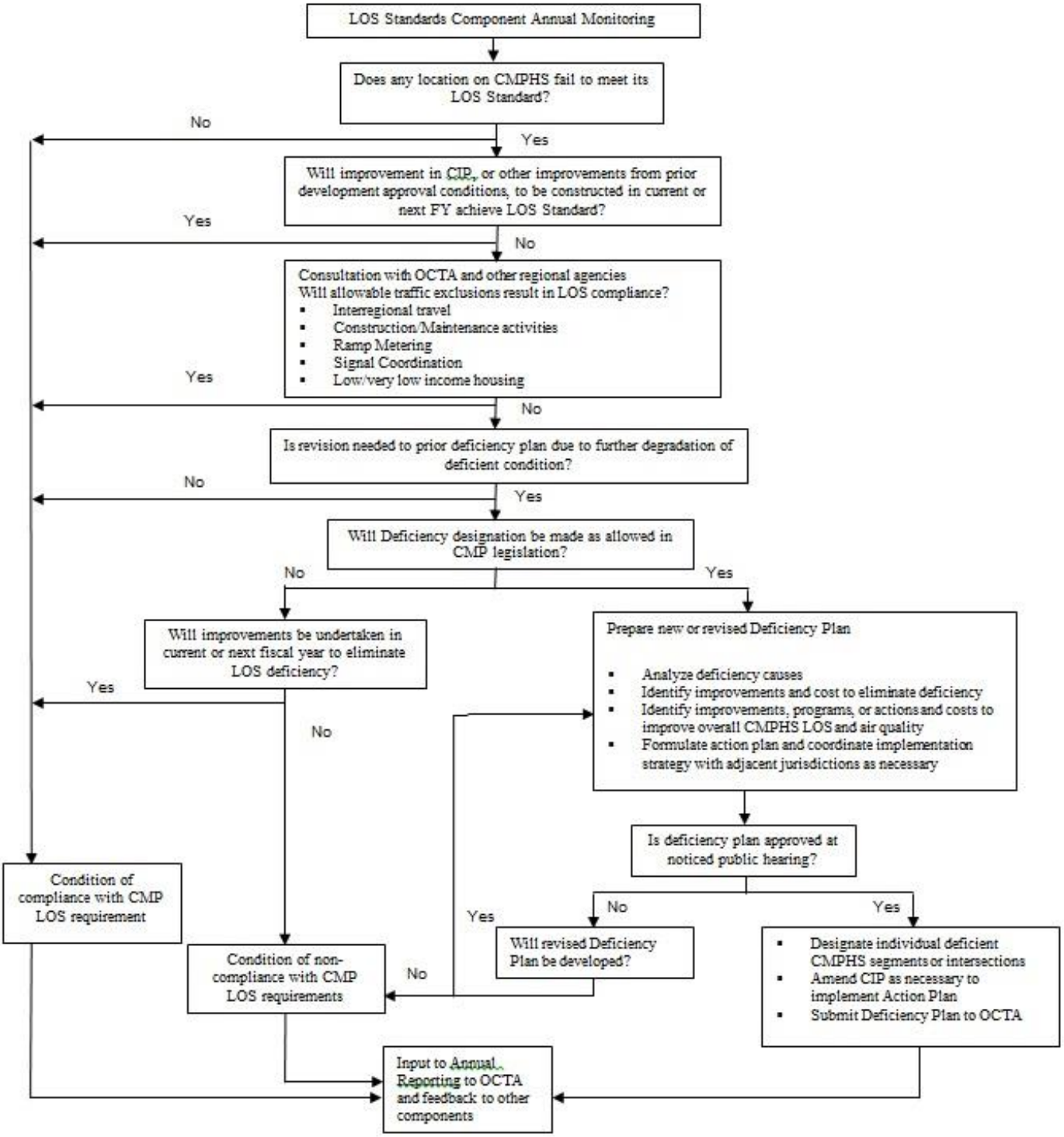
Appendix C-1: CMP Deficiency Plan Flow Chart

APPENDIX C-1: CMP Deficiency Plan Flow Chart



Appendix C-2: Deficiency Plan Decision Flow Chart

APPENDIX C-2: Deficiency Plan Decision Flow Chart



Appendix D: *CMP Monitoring Checklists*

Jurisdiction:	Choose an item.

CMP Monitoring Checklist: Level of Service (LOS)				
CMP Checklist		**YES**	**NO**	**N/A**
1.	Check "Yes" if either of the following apply: • There are no CMP intersections in your jurisdiction. • Factoring out statutorily-exempt activities[1], all CMP intersections within your jurisdiction are operating at LOS E (or the baseline level, if worse than E) or better.	☐	☐	
NOTE: ONLY THOSE AGENCIES THAT CHECKED "NO" FOR QUESTION 1 NEED TO ANSWER THE REMAINING QUESTIONS.				
2.	If any, please list those intersections that are not operating at the CMP LOS standards. • _____ • _____ • _____			☐
3.	Will deficient intersections, if any, be improved by mitigation measures to be implemented in the next 18 months or improvements programmed in the first year of any recent funding program (i.e. local jurisdiction CIP, Measure M CIP)?	☐	☐	☐
	a. If not, has a deficiency plan been developed for each intersection that will be operating below the CMP LOS standards?	☐	☐	☐
Additional Comments:				

[1]The following activities are statutorily-exempt from deficiency determinations: interregional travel, traffic generated by the provision of low and very low income housing, construction rehabilitation or maintenance of facilities that impact the system, freeway ramp metering, traffic signal coordination by the state or multi-jurisdictional agencies, traffic generated by high-density residential development within 1/4 mile of a fixed-rail passenger station, traffic generated by mixed-use residential development within 1/4 mile of a fixed-rail passenger station.

CMP Monitoring Checklist: Deficiency Plans				
CMP Checklist		**YES**	**NO**	**N/A**
1.	Check "Yes" if either of the following apply: • There are no CMP intersections in your jurisdiction. • Factoring out statutorily-exempt activities[2], all CMP Highway System (CMPHS) intersections within your jurisdiction are operating at LOS E (or the baseline level, if worse than E) or better.	☐	☐	
NOTE: ONLY THOSE AGENCIES THAT CHECKED "NO" FOR QUESTION 1 NEED TO ANSWER THE REMAINING QUESTIONS.				
2.	If any, please list those intersections found that are not operating at the CMP LOS standards. • _____ • _____ • _____			☐
3.	Are there improvements to bring these intersections to the CMP LOS standard scheduled for completion during the next 18 months or programmed in the first year of the CIP?	☐	☐	☐
NOTE: ONLY THOSE AGENCIES THAT CHECKED "NO" FOR QUESTION 3 NEED TO ANSWER THE REMAINING QUESTIONS.				
4.	Has a deficiency plan or a schedule for preparing a deficiency plan been submitted to OCTA?	☐	☐	☐
5.	Does the deficiency plan fulfill the following statutory requirements? :			
	a. Include an analysis of the causes of the deficiency?	☐	☐	☐
	b. Include a list of improvements necessary to maintain minimum LOS standards on the CMPHS and the estimated costs of the improvements?	☐	☐	☐
	c. Include a list of improvements, programs, or actions, and estimates of their costs, which will improve LOS on the CMPHS and improve air quality?	☐	☐	☐
	i. Do the improvements, programs, or actions meet the criteria established by South Coast Air Quality Management District (SCAQMD) (see the CMP Preparation Manual)?	☐	☐	☐

[2]The following activities are statutorily-exempt from deficiency determinations: interregional travel, traffic generated by the provision of low and very low income housing, construction rehabilitation or maintenance of facilities that impact the system, freeway ramp metering, traffic signal coordination by the state or multi-jurisdictional agencies, traffic generated by high-density residential development within 1/4 mile of a fixed-rail passenger station, traffic generated by mixed-use residential development within 1/4 mile of a fixed-rail passenger station.

CMP Monitoring Checklist: Deficiency Plans (cont.)				
CMP Checklist		**YES**	**NO**	**N/A**
6.	Are the capital improvements identified in the deficiency plan programmed in your seven-year CIP?	☐	☐	☐
7.	Does the deficiency plan include a monitoring program that will ensure its implementation?	☐	☐	☐
8.	Does the deficiency plan include a process to allow some level of development to proceed pending correction of the deficiency?	☐	☐	☐
9.	Has necessary inter-jurisdictional coordination occurred?	☐	☐	☐
10.	Please describe any innovative programs, if any, included in the deficiency plan:			☐
Additional Comments:				

CMP Monitoring Checklist: Land Use Coordination				
CMP Checklist		**YES**	**NO**	**N/A**
1.	Have you maintained the CMP traffic impact analysis (TIA) process you selected for the previous CMP?	☐	☐	
	a. If not, have you submitted the revised TIA approach and methodology to OCTA for review and approval?	☐	☐	☐
2.	Did any development projects require a CMP TIA during this CMP cycle?[3]	☐	☐	
NOTE: ONLY THOSE AGENCIES THAT CHECKED "YES" FOR QUESTION 2 NEED TO ANSWER THE REMAINING QUESTIONS.				
3.	If so, how many?		_____	
4.	Please list any CMPHS links & intersections that were projected to not meet the CMP LOS standards (indicate whether any are outside of your jurisdiction). • _____ • _____ • _____			☐
	a. Were mitigation measures and costs identified for each and included in your seven-year CIP?	☐	☐	☐
	b. If any impacted links & intersections were outside your jurisdiction, did your agency coordinate with other jurisdictions to develop a mitigation strategy?	☐	☐	☐
5.	If a local traffic model was/will be used, did you follow the data and modeling consistency requirements as described in the CMP Preparation Manual (available online at http://www.octa.net/pdf/cmpprepmanual.pdf)?	☐	☐	☐
Additional Comments:				

[3]Exemptions include: any development generating less than 2,400 daily trips, any development generating less than 1,600 daily trips (if it directly accesses a CMP highway), final tract and parcel maps, issuance of building permits, issuance of certificate of use and occupancy, and minor modifications to approved developments where the location and intensity of project uses have been approved through previous and separate local government actions prior to January 1, 1992.

CMP Monitoring Checklist: Capital Improvement Program (CIP)				
CMP Checklist		**YES**	**NO**	**N/A**
1.	Did you submit a seven-year CIP to OCTA by June 30?	☐	☐	☐
2.	Does the CIP include projects to maintain or improve the performance of the CMPHS (including capacity expansion, safety, maintenance, and rehabilitation)?	☐	☐	☐
3.	Is it consistent with air quality mitigation measures for transportation- related vehicle emissions?	☐	☐	☐
4.	Was the OC Fundtracker CIP provided by the OCTA used to prepare the CIP?	☐	☐	☐
Additional Comments:				

OPTIONAL - CMP Monitoring Checklist: Federal Congestion Management				
CMP Checklist		**YES**	**NO**	**N/A**
1.	Does any federally funded project in the CIP result in a significant increase in single occupant vehicle (SOV) capacity?	☐	☐	☐
NOTE: ONLY THOSE AGENCIES THAT CHECKED "YES" FOR QUESTION 1 NEED TO ANSWER THE REMAINING QUESTION.				
2.	If so, was the project developed as part of the federal Congestion Management Process, in other words, was there an appropriate analysis of reasonable travel demand reduction and operational strategies?	☐	☐	☐
Additional Comments:				

I certify that the information contained in this checklist is true.

Name (Print)	Title	Signature	Date

Appendix E: Capital Improvement Programs

Available online at:

https://octa.net/pdf/2023CMPAppendixE.pdf?n=2023

Appendix F: *Measure M2 Program of Projects*

OCGO PROJECTS

FREEWAY IMPROVEMENT PROGRAM

Interstate 5 (I-5) Projects

- (A) **I-5**, SR-55 to SR-57
- (B) **I-5**, El Toro "Y" Area to SR-55
- (C) **I-5**, SR-73 to El Toro Road
- (C) **I-5**, Avenida Pico to San Juan Creek Road
- (D) **I-5** Highway Interchanges

State Route 22 (SR-22) Projects

- (E) **SR-22** Access Improvements

State Route 55 (SR-55) Projects

- (F) **SR-55**, I-405 to I-5
- (F) **SR-55**, I-5 to SR-91

State Route 57 (SR-57) Projects

- (G) **SR-57** NB, Orangewood Avenue to Katella Avenue
- (G) **SR-57** NB, Katella Avenue to Lincoln Avenue
- (G) **SR-57** NB, Orangethorpe Avenue to Lambert Road
- (G) **SR-57** NB, Lambert Road to Tonner Canyon Road

State Route 91 (SR-91) Projects

- (H) **SR-91** WB, I-5 to SR-57
- (I) **SR-91**, SR-57 to SR-55
- (J) **SR-91**, SR-55 to Riverside County Line

Interstate 405 (I-405) Projects

- (K) **I-405**, I-605 to SR-73
- (L) **I-405**, SR-55 to El Toro "Y" Area

Interstate 605 (I-605) Projects

- (M) **I-605** Katella Interchange Improvements

Freeway Mitigation Restoration Projects
Part of Projects A-M

Freeway Mitigation Acquisition Projects
Part of Projects A-M

STREETS & ROADS

- (O) **Grade Separation Program** (shown)
- (P) **Signal Synchronization Project Corridors**

TRANSIT PROJECTS

- (R) **Grade Separation and Station Improvement Projects**
- (S) **Transit Extensions to Metrolink**
- (T) **Metrolink Station Conversion to accept Future High-Speed Rail Systems**

OC GO PROJECTS NOT SHOWN

Project N: Freeway Service Patrol

Project O: Streets & Roads - Regional Capacity Program

Project Q: Local Fair Share Program

Project R: Grade crossing and Trail Safety Enhancements

Metrolink Service Expansion Program

Project U: Senior Mobility Program (SMP), Senior Non-emergency Medical Transportation Program (SNEMT), and Fare Stabilization Programs

Project V: Community Based Transit/Circulators

Project W: Safe Transit Stops

Project X: Environmental Cleanup Program

Appendix G: Orange County Subarea Modeling Guidelines

Note: *The primary purpose of these guidelines are to promote consistency in transportation modeling within Orange County.*

Available online at:

https://octa.net/pdf/2023CMPAppendixG-Guidelines.pdf